# JOURNAL
OF THE
# AMERICAN VETERINARY MEDICAL ASSOCIATION


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Volume CXIX DECEMBER 1951 Number 897

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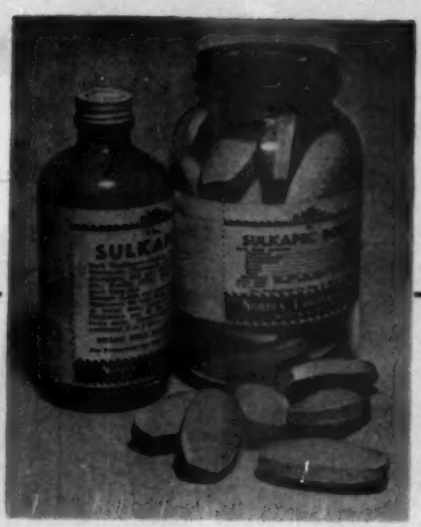


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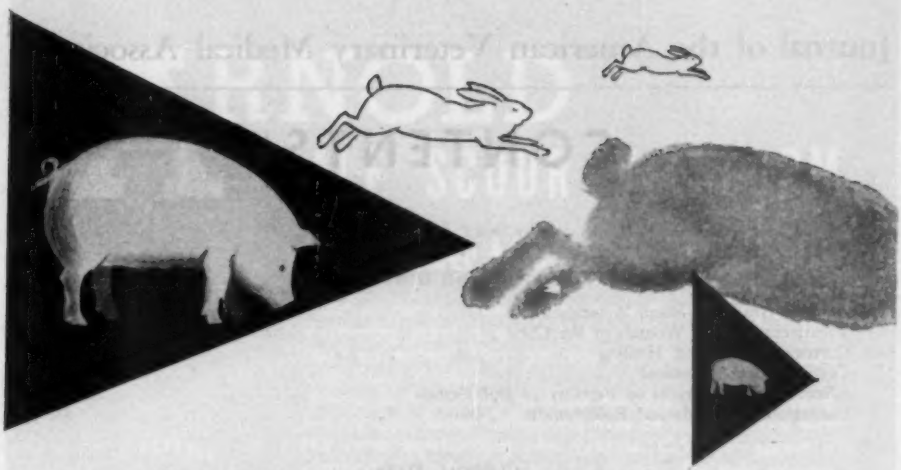

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$7.50 per annum  Foreign $8.00: Canada $8.00  Single Copies 75 cts. prepaid in U. S.

Published monthly at 600 S. Michigan Ave., Chicago, Ill., by the American Veterinary Medical Association. Entered as second class matter August 10, 1932, at the Post Office at Chicago 5, Illinois, under the act of March 3, 1879. Additional entry at Mendota, Ill. Accepted for mailing at special rate of postage provided for in Section 538, act of February 28, 1925, authorized August 10, 1932. Reproduction of any part of this publication is prohibited, unless special permission is given. Permission will be given if the purpose seems justifiable and, in signed articles, if the rights or requests of author are not violated thereby. Reprints should be ordered in advance. Prices will be quoted after publication. Please send prompt notice of change of address, giving both old and new. Advise whether the change is temporary or permanent. Address all correspondence to American Veterinary Medical Association, 600 S. Michigan Ave., Chicago 5, Ill.

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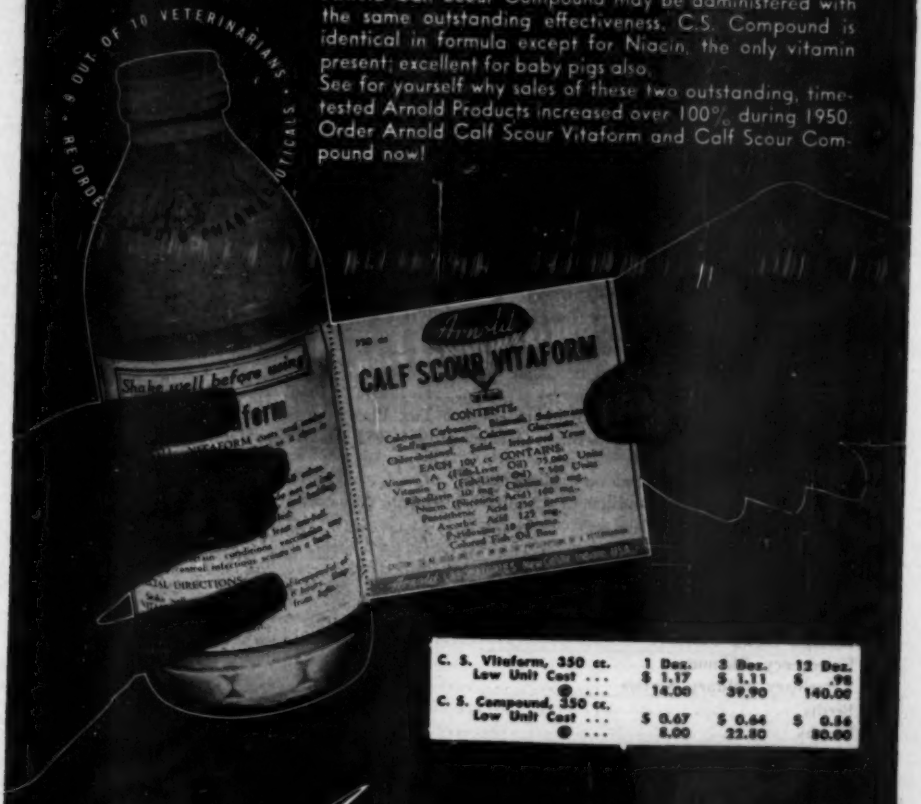


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# AVMA ☆ Report

*Veterinary Medical Activities*

## The President's Letter

To Members of the AVMA
Greetings:

For the officers, the staff, and myself, I wish to convey to you and your families the very best wishes for a Merry Christmas and a Happy and Prosperous New Year.

While this is the Season for relaxation and enjoyment of the fruits of a productive year, it is essentially symbolized by birth and new life. I would, therefore, call your attention to the "grass roots" membership campaign now beginning and solicit your aid in reaching our goal.

By virtue of his position, the resident secretary in your state or province is serving as coördinator. He may call upon you for assistance which I know you will gladly give. In the meantime, how about making a few contacts on your own? Listed below are five fundamental reasons why every veterinarian should be a member of the AVMA. Please bring these to the attention of your nonmember colleagues and see if you can bring them in.

1) The AVMA is the only organization qualified to speak and act in your interest on national questions.

2) You regularly receive essential and up-to-date literature on veterinary medicine (including the monthly JOURNAL and, annually, the "Proceedings Book" as part of the membership dues, and other publications at nominal cost).

3) You have the advantage of attending, and being a participating member at, the annual convention of the largest and most influential group of veterinarians in the world.

4) You receive many side-advantages, such as eligibility for group liability insurance, and you benefit directly from the Association's public relations and professional relations activities.

5) It is a duty as well as a privilege to support and be a member of the organization that represents you.

I am counting on each member to do all he can to bring nonmember veterinarians into the AVMA.

Again — a Merry Christmas and a Happy New Year!

Sincerely,

John R. Wells

★ ★ ★

✦ Just off the press is a new edition of "Veterinary Medicine as a Career," an Association publication especially prepared for high school students. AVMA members who are called upon to give career talks to student groups may obtain any reasonable number of copies without charge.

★ ★ ★

✦ Dr. O. Norling-Christensen, Executive Board member from District III, represented the Association and was the speaker at the meeting of the Ohio State University Student Chapter of the AVMA on October 10.

Dr. Christensen, also president of the Ohio State University Alumni Association, represented his alma mater at the inauguration of Dr. L. A. Kimpton as chancellor of the University of Chicago on Oct. 19, 1951.

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1. Roberts, S.J., J.Am.Vet.M.A. *116*:282, Apr. 1950.
2. Beyer, K.H., *et al.*, J.Pharmacol.&Exper.Therap. *93*:388, Aug. 1948


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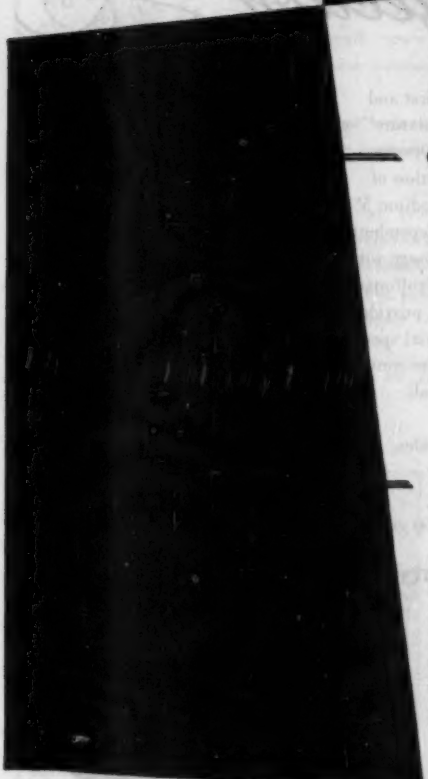

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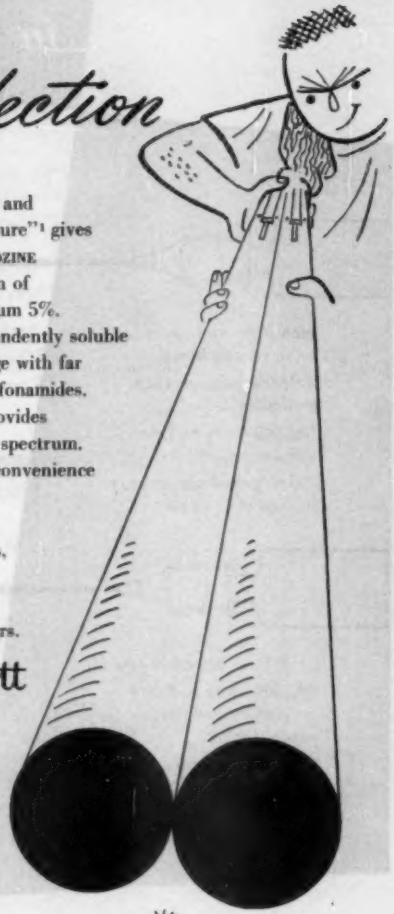

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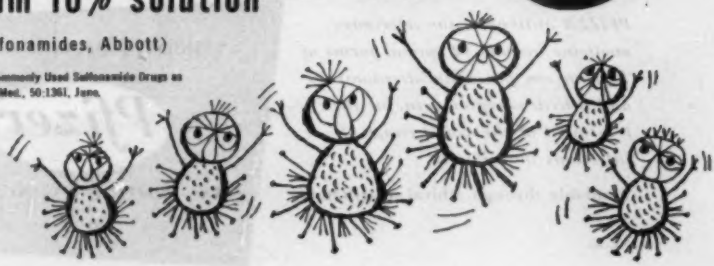
1. Lehr, D. (1950), Relative Merits of Commonly Used Sulfonamide Drugs as Components of Mixtures, N.Y. State J. Med., 50:1361, June.



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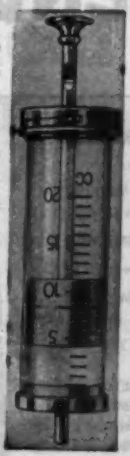

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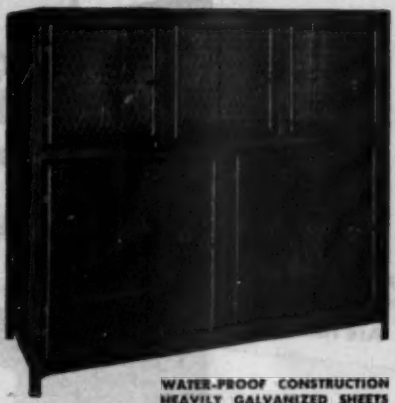

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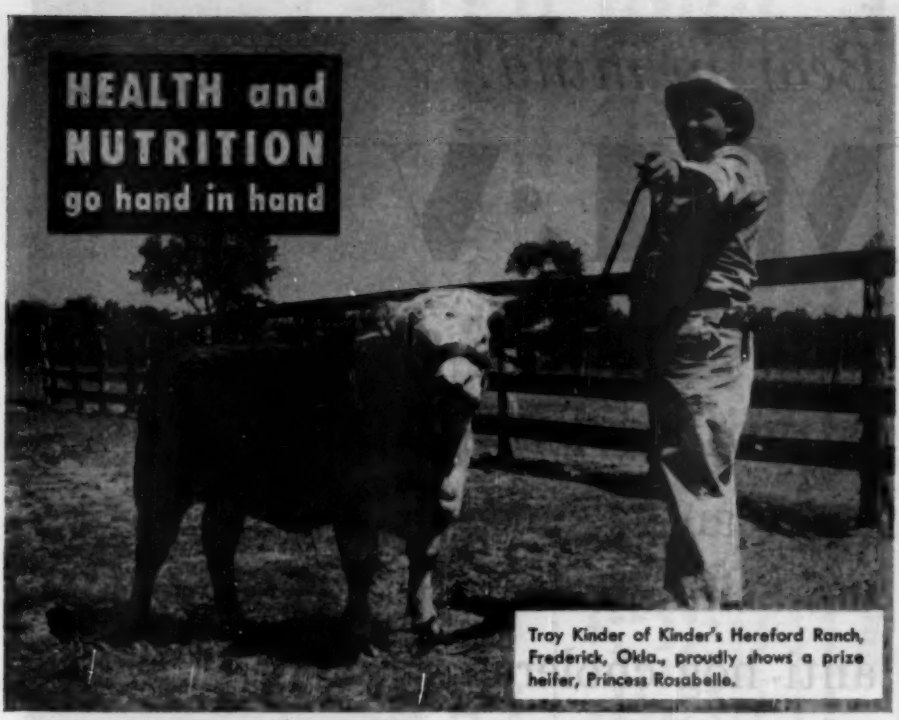


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Journal
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American Veterinary Medical Association

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VOL. CXIX DECEMBER, 1951 NO. 897

# Canine Histoplasmosis

ROBERT W. MENGES, D.V.M.

*Kansas City, Kansas*

REPORTS IN recent literature indicate that veterinarians are recognizing the importance of the systemic fungus infections in animals. Among the systemic fungus infections most commonly reported are histoplasmosis, blastomycosis, and coccidioidomycosis. Canine histoplasmosis has been recognized quite frequently. The present paper is a review of the literature with additional cases making a total of 42 cases of canine histoplasmosis reported (table 1).

*Definition.*—Histoplasmosis, caused by the fungus *Histoplasma capsulatum*, is an infection characterized by emaciation, persistent diarrhea, ascites, chronic cough, weakness, anemia, and irregular pyrexia. There is frequently hepatomegaly, splenomegaly, lymphadenopathy, and ulcerations in the naso-oral-pharyngeal cavities and intestines.

*Geographic Distribution.*—Histoplasmosis in man has been reported from Central America, South America, the United States, England, the Philippines, Java, South Africa, Austria, Spain, Portugal, and Australia. Most of the reported canine cases have occurred in the east central part of the United States. Data have been obtained for 40 cases of canine histoplasmosis which have occurred in the United States. The number of cases according to location are as follows (fig. 1 and table 1): Ohio, 13 cases[19, 20, 28]; Missouri, 10 cases[8, 9, 11, 13, 14, 26]; Tennessee, 6 cases[1, 10, 19, 29, 30, 31]; Kansas, 3 cases[26]; Virginia, 3 cases[7, 18]; Michigan, 2 cases[24, 25]; Iowa, 2 cases[5]; and Indiana, 1 case.[12] Two cases have been reported which occurred outside the United States, one in Brazil,*[21] and another in the Canal Zone.[6]

*Etiology.*—*Histoplasma capsulatum* was first isolated from a dog in 1939 by De Monbreun.[3] Prior to this, the organism was observed in human tissues by Darling in 1906.[2] Darling named the genus and species *H. capsulatum* and designated the disease as "histoplasmosis." De Monbreun[3] was the first to culture the organism from a human patient (1934).

*Histoplasma capsulatum* is a fungus which occurs in tissues in a *yeast phase*, and in culture at room temperature in a *mycelial phase*. The yeast phase is found in tissues as a small (1 to 5$\mu$), oval body in the mononuclear cells. The organism is primarily a parasite of the reticulo-endothelial system and rarely is found extracellularly in tissues.

On Sabouraud's glucose agar at room temperature, the yeast phase converts to the mycelial phase. The fungus grows slowly, producing a white, cottony, aerial mycelium which later turns buff to brown. Microscopically, these cultures show branching septate hyphae bearing small, round to pyriform, smooth spores (2.5 to

From the Communicable Disease Center, Public Health Service, Federal Security Agency, Atlanta, Ga.

*Para's case is included since it has been reported in the literature; however, we have observed cultures of the "PCTA" strain isolated by Para and this isolate is not characteristic of the other cultures of H. capsulatum we have examined.

Since this article was written, 3 additional cases have been found by Dr. L. D. Kintner in central Missouri, and 1 case from Indiana was reported in the Allied Veterinarian, July-Aug., 1951. Case No. 31 has been published by Dr. L. Jackson in Veterinary Medicine, Aug., 1951.

3.0$\mu$ in diameter) on short lateral branches or sessile on the sides of the hyphae. Eventually the characteristic round to pyriform tuberculate chlamydospores (7.5 to 15.0$\mu$ in diameter) develop, which are necessary to establish a mycologic diagnosis.

*Pathology.*—The gross pathology observed in experimentally infected dogs has been described by Ruhe and Cazier.[16] They noted that the dogs had considerable natural resistance to *H. capsulatum*, since even massive doses of the yeast phase of the organism were not uniformly fatal. One of the dogs recovered from the experimental infection. This case showed only minimal lesions sixteen months after inoculation.[17]

The gross pathology observed in naturally occurring cases has been described by several authors.[1, 4-14] Almost all of the cases have been the disseminated or fatal type of infection and the pathology described has been highly variable. A detailed description of the pathology, therefore, would be of little value. It should be emphasized that since the pathological picture is so variable, histoplasmosis may be confused with other diseases.

*Symptoms.*—The symptoms described have been numerous, but for many of the cases, they have been incomplete. There were no symptoms reported for 17 of the cases. The frequency of symptoms for 25 of the 42 cases was as follows: gradual loss of weight, emaciation, 19; persistent diarrhea, 17; anorexia, 11; enlarged abdomen, 9; hepatomegaly, 8; normal appetite, 7; ascites, 6; chronic cough, 5; listless, less active, depressed, 5; progressive weakness, 5; anemic, paleness of mucous membranes, 4; high temperature for several days, 4; intermittent fever, 4; dyspnea, 3; mass palpated in the abdomen, 3; icterus, 3; splenomegaly, 3; observed eating foreign objects, 2; enlarged lymph nodes, 2; persistent vomiting, 2; vomiting prior to death, 2; normal temperature, 2; hoarseness and high-pitched voice, 1; hind legs swollen, 1; oral and submucosal hemorrhages, 1; rough coat, 1; ulcers of the tongue, 1; increased thirst, 1; partial paralysis of both hind legs, 1; and rasping sounds on auscultation of the chest, 1.

The length of illness varied from two weeks to one year. Only 16 reports recorded the length of illness. The frequency was as follows: 2 months, 6; 1 month, 2; 5 months, 2; 1 year, 2; 3 months, 1; 6 weeks, 1; 3 weeks, 1; and 2 weeks, 1.

It should be mentioned that most of the reported cases were of the disseminated or fatal type. Non fatal histoplasmosis occurs in human beings, and

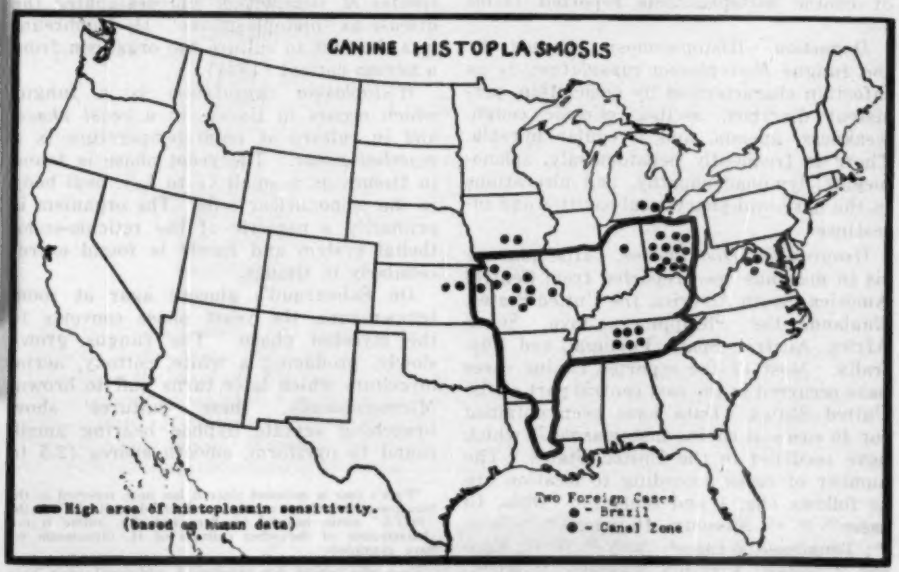



Fig. 1—Distribution of cases of canine histoplasmosis in the United States. Two cases have been reported which occurred outside the United States, one in Brazil, and another in the Canal Zone.

experimentally it has been shown to occur in a dog.[17] Some workers believe that histoplasmosis may simulate tuberculosis in having a primary or localized stage and a secondary or disseminated stage. That is, the organism on first contact with the body causes a small localized lesion, in most cases accompanied by little or no illness. This type of primary infection is thought to be of frequent occurrence. However, in the secondary or disseminated stage, the illness is usually severe, the danger of dying is more marked, and the illness is usually quite evident.

In summarizing the symptomatology of canine histoplasmosis, one might suspect histoplasmosis in an animal if it showed a gradual loss of weight, persistent diarrhea, enlarged abdomen, ascites, chronic cough, weakness, and a high temperature or intermittent fever. On x-ray, enlarged mediastinal or bronchial lymph nodes and lung lesions may be observed. It should be stressed that the symptoms may be obscure and varied.

*Epizoötiology.*—The data concerning canine histoplasmosis is at present incomplete; however, an analysis of the 42 cases indicates certain tendencies.

Sex.—Sex did not appear to be an important factor because, of the 42 cases, 18 were males, 22 females, and 2 unknown.

Age.—The majority of the cases occurred among young dogs 3 years and under. The cases according to age were: under 2 years, 12; 2 and 3 years, 20; 4 and 5 years, 3; 6 and 7 years, 2; 8 years and over, 2; and unknown, 3.

Breed.—Various breeds were infected. Among the 42 cases, there were 7 Boxers, 5 Cocker Spaniels, 4 Fox Terriers, 4 Springer Spaniels, 3 Pit Bull Terriers, 3 Boston Terriers, 2 Foxhounds, 2 Pointers, 2 English Sheepdogs, 1 Beagle, 1 Coonhound, 1 Pekingese, 1 Collie, 1 German Shepherd, 1 English Setter, 1 Scottish Terrier, 1 mongrel, and 2 unknown. Since various breeds of dogs were involved, it did not appear that the breed was an important factor.

Epizoötics.—There is some evidence that histoplasmosis may occur in an epizoötic form among dogs of the same litter. This was noted by Seibold[7] and Olson, Bell, and Emmons[13] in their study of the disease in Loudon County, Virginia. The sire and 2 pups of a litter of 8 were found to have histoplasmosis, and 2 other pups expired of symptoms suggestive of histoplasmosis. Of the remaining 4 pups, 2 were destroyed

**Table I—Cases of Naturally Occurring Canine Histoplasmosis**

| No. | Date | Author | Breed | Age | Sex | Habitat | Diagnosis* |
|---|---|---|---|---|---|---|---|
| 1 | 1939 | DeMonbreun[1] | Boston Ter. | 3 yr. | M | Tenn. | 1, 2 |
| 2 | 1944 | Callahan[4] | Springer Spaniel | 7 yr. | F | Mo. | 1 |
| 3 | 1945 | Parsons and Everett[24] | Beagle | ? | F | Mich. | 1 |
| 4 | 1945 | Birge and Riser[5] | Pekingese | 4 yr. | M | Iowa | 1 |
| 5 | 1945 | Birge and Riser[5] | Boston Ter. | 5 yr. | M | Iowa | 1 |
| 6 | 1945 | Tomlinson and Grocott[6] | Springer Spaniel | 6 yr. | F | Canal Zone | 1 |
| 7 | 1946 | Para[25] | Mongrel | 3 yr. | M | Brazil | 1, 2 |
| 8 | 1946 | Siebold[7] | Pit Bull Terrier | 2½ yr. | M | Va. | 1 |
| 9 | 1946 | Siebold[7] | Pit Bull Terrier | 18 mo. | F | Va. | 2 |
| 10 | 1947 | Olson, Bell, Emmons[13] | Pit Bull Terrier | 18 mo. | M | Va. | 2 |
| 11 | 1948 | Harmon[8] | Fox Ter. | 14 mo. | M | Mo. | 1 |
| 12 | 1948 | Harmon[8] | Fox Ter. | 25 mo. | M | Mo. | 1 |
| 13 | 1948 | Harmon[14] | Coon Hound | 2 yr. | M | Mo. | 1 |
| 14 | 1948 | Gould[26] | Boston Ter. | 2 yr. | M | Mich. | 1 |
| 15 | 1948 | Ruhe[29] | Boxer | 10 mo. | M | Tenn. | 1, 2 |
| 16 | 1948 | DeMonbreun[30] | Boxer | 3 mo. | F | Tenn. | 2 |
| 17 | 1948 | Anthony[9] | Boxer | 1 yr. | F | Mo. | 1, 2 |
| 18 | 1949 | Cordy[10] | C. Span. | 2 yr. | F | Tenn. | 1 |
| 19 | 1949 | Peterson[31] | Boxer | 10 mo. | F | Tenn. | 2 |
| 20 | 1949 | Prior, Cole, Torbet[19] | Fox Ter. | 2½ yr. | M | Ohio | 1, 2 |
| 21 | 1949 | Prior, Cole, Torbet[19] | Springer Spaniel | 2½ yr. | M | Ohio | 1 |
| 22 | 1949 | Prior, Cole, Torbet[19] | English Sheepdog | 1 yr. | F | Ohio | 1, 2 |
| 23 | 1949 | Prior, Cole, Torbet[19] | Boxer | 2 yr. | F | Tenn. | 1, 2 |
| 24 | 1949 | Cole, Prior, Saslaw[20] | C. Span. | 2 yr. | M | Ohio | 1, 2 |
| 25 | 1950 | Mosier, Barner, Davis[28] | Boxer | 2 yr. | F | Mo. | 1 |
| 26 | 1950 | Mosier, Barner, Davis[28] | Boxer | 1 yr. | M | Kan. | 1, 2 |
| 27 | 1950 | Mosier, Barner, Davis[28] | C. Span. | 3 yr. | F | Kan. | 1 |
| 28 | 1950 | Mosier, Barner, Davis[28] | Mon. Col. | 2 yr. | F | Kan. | 1 |
| 29 | 1950 | Sealy[11] | C. Span. | 3 yr. | F | Mo. | 1 |
| 30 | 1950 | Osebold[12] | C. Span. | 2 yr. | F | Ind. | 1 |
| 31 | 1950 | Kintner[15] | German Shepherd | 2½ yr. | M | Mo. | 1 |
| 32 | 1950 | Kintner[15] | Foxhound | 11 mo. | F | Mo. | 1 |
| 33 | 1950 | Kintner[15] | Foxhound | 18 mo. | F | Mo. | 1 |
| 34 | 1951 | Prior, Cole[32] | Fox Ter. | 2 yr. | F | Ohio | 1, 2 |
| 35 | 1951 | Prior, Cole[32] | English Sheepdog | 1½ yr. | F | Ohio | 1, 2 |
| 36 | 1951 | Prior, Cole[32] | Eng. Set. | 14 yr | F | Ohio | 1, 2 |
| 37 | 1951 | Prior, Cole[32] | Pointer | 3 yr. | M | Ohio | 1, 2 |
| 38 | 1951 | Prior, Cole[32] | Springer Spaniel | 9 yr. | F | Ohio | 1, 2 |
| 39 | 1951 | Prior, Cole[32] | Scottish Terrier | 5 yr. | F | Ohio | 1, 2 |
| 40 | 1951 | Prior, Cole[32] | Pointer | 2 yr. | M | Ohio | 1, 2 |
| 41 | 1951 | Prior, Cole[32] | | | | Ohio | |
| 42 | 1951 | Prior, Cole[32] | | | | Ohio | |

*Diagnosis: 1 = Microscopic demonstration of organisms in the tissues; 2 = culture of Histoplasma capsulatum.

at birth, 1 expired when only 1 week old, and 1 female was destroyed after giving birth to 9 pups.

Further evidence that histoplasmosis occurs among litter mates was given in cases described by Harmon.[6] Since a detailed history of these cases has not been reported, this information will be presented here.

The dam of the litter in question was obtained from a town in Illinois several years ago. At that time, the owner was living on a farm 2½ miles northwest of Eldon, Mo. The dam, a smooth-haired Fox Terrier, was bred several times during her 7 years of life.

The second litter of the dam consisted of 5 pups, 4 males and 1 female, born about 1940. All but 2 males were destroyed. The 2 males were in good health in August 1949.

On Sept. 28, 1945, the dam had another litter of 5 pups, 3 males and 2 females. The pups were born at the owner's farm 2½ miles from Eldon. The 2 females were destroyed at birth. At weaning time, about six weeks, the 3 male pups were sold.

One pup, sold to a farmer at High Point, Mo., was still alive in August, 1949, and reported in good condition. The other 2 male pups, sold to a woman in Eldon, both developed histoplasmosis, 1 in November, 1946, at 1 year of age, and 1 in October, 1947, at 2 years of age. These are the 2 cases reported by Harmon.

The sire of the 5 pups born Sept. 28, 1945, was unknown. The brood bitch was shot by a neighbor when she was about 7 years old.

Probably the most interesting outbreak of histoplasmosis in dogs occurred at a Boxer kennel at Nashville, Tenn.[32] A detailed history of this outbreak appears in the September, 1951, Journal, pp. 195-200.

To summarize this outbreak, several litter mates became sick and 4 proved to be cases of histoplasmosis. Between January, 1947, and March, 1949, 23 pups were born, and 15 (65%) expired of various causes.

It appears, therefore, that canine histoplasmosis may occur in small epizoötics among litter mates. No definite proof has been found as yet to indicate that the disease is transmitted from one animal to another, although a recent article by Prior and Cole[28] suggests such transmission. Since the fungus has been isolated from soil,[21] it seems quite probable that the infection may be air-borne.

*Diagnosis.*—The majority of the cases described were of the fatal or disseminated type, and a diagnosis was made, in most cases, after the animal expired. This was done either by culturing tissues and isolating the fungus, or by microscopic demonstration of the organism in tissues.

Since the symptoms are often obscure, it may be difficult to make a diagnosis. In the disseminated type, however, there appears to be a definite pattern of symptoms. Emaciated animals with a persistent diarrhea and an enlarged abdomen should be suspected. A definite diagnosis can be obtained by biopsy followed by culture of the tissues for *H. capsulatum* or microscopic demonstration of the organism in tissues.[27] It is also possible to culture blood, sputum, and gastric specimens for isolation of the fungus.

The histoplasmin skin test[19, 20, 22] may be used although it is not diagnostic. Suspicious animals may be skin tested to determine sensitivity. In areas where the histoplasmin sensitivity rates are high, apparently healthy animals may be positive to the skin test.

A complement-fixation test for histoplasmosis[23] has been found to be an excellent diagnostic tool for human serums, but is still in the developmental stage for canine serums. The test is thought to indicate activity, a positive (++++) reaction indicating recent infection. Positive reactions have been found among experimentally infected dogs,[16,17] which indicates that the test may be useful for canine serums.

X-rays should be taken of suspected animals to observe possible lung lesions, enlarged lymph nodes, or other changes.

At the present time, it is necessary to demonstrate *H. capsulatum* in tissues or by culture before a definite diagnosis of histoplasmosis can be made.

*Prognosis.*—In the disseminated type of the disease, the prognosis is usually poor. In the past, it was thought that histoplasmosis among human beings was 100 per cent fatal. This has been proved incorrect and, recently, numerous nonfatal cases have been reported. Although no nonfatal canine cases have been reported, it has been shown experimentally that nonfatal canine histoplasmosis may occur.[17] In the benign type of the disease, the prognosis is good.

*Prevention and Treatment.*—No effective preventive measures have been found for the control of histoplasmosis, and a good effective treatment still is not available. Some of the drugs that have been tried are penicillin, sulfathiazole, sulfaguanidine,

nicotinic acid, fuadin, and potassium iodide.

## SUMMARY

A description of histoplasmosis in the dog, based on 42 cases of canine histoplasmosis found by various workers, is given. Most of the cases occurred in the east central part of the United States. The symptoms commonly observed in the fatal cases were a gradual loss of weight, persistent diarrhea, enlarged abdomen, ascites, chronic cough, weakness, and a high temperature or intermittent fever.

The epizoötiology of canine histoplasmosis is discussed and epizoötics are described. Diagnosis, prognosis, prevention, and treatment are considered. It is noted that at present it is necessary to demonstrate *Histoplasma capsulatum* in tissues or by cultures before a definite diagnosis of histoplasmosis can be made.

### References

[1]De Monbreun, W. A.: The Dog as a Natural Host for *Histoplasma Capsulatum*. Am. J. Trop. Med., *19*, (1939): 565-587.

[2]Darling, S. T.: A Protozoan General Infection Producing Pseudotubercles in the Lungs and Focal Necroses in the Liver, Spleen, and Lymph Nodes. J.Am.M.A., *46*, (1906): 1283-1285.

[3]De Monbreun, W. A.: The Cultivation and Cultural Characteristics of Darling's *Histoplasma Capsulatum*. Am. J. Trop. Med., *14*, (1934): 93-125.

[4]Callahan, W. P.: Spontaneous Histoplasmosis Occurring in a Dog. Am. J. Trop. Med., *24*, (1944): 363-365.

[5]Birge, R. F., and Riser, W. H.: Canine Histoplasmosis. Report of Two Cases. North Am. Vet., *26*, (1945): 281-287.

[6]Tomlinson, W. J., and Grocott, R. G.: Canine Histoplasmosis. A Pathologic Study of the Three Reported Cases and the First Case Found in the Canal Zone. Am. J. Clin. Path., *15*, (1945): 501-507.

[7]Seibold, H. R.: A Case of Histoplasmosis in a Dog. J.A.V.M.A., *109*, (1946): 209-211.

[8]Harmon, K. S.: Histoplasmosis in Dogs. A Report of Two Cases. J.A.V.M.A., *113*, (1948): 60-62.

[9]Anthony, C. H.: Case History—Histoplasmosis Suspect (Canine). Jen-Sal J., (Nov.-Dec. 1948): 22.

[10]Cordy, D. R.: Histoplasmosis in a Dog. Cornell Vet., *39*, (1949): 339-343.

[11]Sealy, R. O., Jr.: Unpublished case, February, 1950.

[12]Osebold, J. W.: *Histoplasma Capsulatum* Infection in a Dog. North Am. Vet., *31*, (1950): 46-47.

[13]Kintner, L. D.: Three unpublished cases of canine histoplasmosis, December, 1950.

[14]Harmon, K. S.: Personal communication, August, 1949.

[15]Pará, Madureira: Histoplasmosis in Brazil. Am. J. Trop. Med., *26*, (1946): 273-292.

[16]Ruhe, J. S., and Cazier, P. D.: A Review of Histoplasmosis. J.A.V.M.A., *115*, (1949): 47-50.

[17]Menges, R. W., Furcolow, M. L., and Ruhe, J. S.: Experimental Histoplasmosis in a Dog: A Non-fatal Case. Pub. Health Rep., *65*, (1950): 628-631.

[18]Olson, B. J., Bell, J. A., and Emmons, C. W.: Studies on Histoplasmosis in a Rural Community. Am. J. Pub. Health, *37*, (1947): 441-449.

[19]Prior, J. A., Cole, C. R., and Torbet, V.: An Evaluation of the Histoplasmin Reaction in the Detection of Naturally Occurring Histoplasmosis in Dogs. Pub. Health Rep., *65*, (1949): 1562-1565.

[20]Cole, C. R., Prior, J. A., and Saslaw, S.: Detection of Canine Histoplasmosis by Intradermal Histoplasmin Test. J.A.V.M.A., *116*, (1950): 135-138.

[21]Emmons, C. W.: Isolation of *Histoplasma Capsulatum* from Soil. Pub. Health Rep., *64*, (1949): 892-896.

[22]Menges, R. W.: The Histoplasmin Skin Test in Animals. J.A.V.M.A., *119*, (1951): 69-71.

[23]Tenenberg, D. J., and Howell, A.: A Complement Fixation Test for Histoplasmosis. I. Technic and Preliminary Results on Animal Sera. Pub. Health Rep., *63*, (1948): 163-168.

[24]Parsons, R. J., and Everett, M.: Histoplasmosis in a Dog: Report of a Case (to be published). Quoted by Parsons, R. J., and Zarafonetis, C. D. J.: Histoplasmosis in Man. Arch. Int. Med., *75*, (1945): 1-23.

[25]Gould, S. E.: Personal communication, June, 1948.

[26]Mosier, J. E., Barner, R. D., and Davis, J. C.: Histoplasmosis in Dogs. J.A.V.M.A., *116*, (1950): 128-131.

[27]Pillsbury, D. M., and Kligman, A. M.: A New Histochemical Tool for the Definite Diagnosis of Fungus Infections. Trans. N.Y. Acad. Sci., *13*, (1951): 145-148.

[28]Prior, J. A., and Cole, C. R.: Studies on the Communicability of Histoplasmosis. Am. Rev. Tuberc., *63*, (1951): 538-546.

[29]Ruhe, J. S.: Unpublished case, November, 1948.

[30]De Monbreun, W. A.: Personal communication, August, 1949.

[31]Peterson, J. C.: Personal communication, May, 1950.

[32]Robinson, V. B., McVickar, D. L., and Peterson, J. C.: Some Aspects of the Epizoötiology of Histoplasmosis in Two Boxer Breeding Kennels. J.A.V.M.A., *119*, (1951): 195-200.

## Reports of National Research Council Available

The National Research Council has on hand a sizeable number of the following reports which they will distribute in quantity, without cost, to anyone who can use them: No. 124, "A Review of Bloat in Ruminants" (875 copies); No. 125, "The Intramammary Therapy of Bovine Mastitis" (2,200 copies); No. 126, "Rabies and Its Control" (2,200 copies). Requests should be addressed to the Publications Office, National Research Council, 2101 Constitution Ave., Washington, D. C.

# ROTC Veterinary Units Attend Summer Encampment

The third annual summer encampment at Medical Field Service School, Fort Sam Houston, Texas, this year was attended by 125 students from six ROTC veterinary units located at the universities of Cornell, Pennsylvania, and Ohio, and the colleges of Iowa State, Kansas State, and Colorado A. & M.

*—U. S. Army Photograph*

**Fig. 1—At the beginning of ROTC veterinary and pharmacy summer encampment at Medical Field Service School, Brig. Gen. James A. McCallam, chief, Veterinary Corps, U. S. Army, was the principal speaker.**

The six-week's training period, which began the latter part of June and extended through the first week in August, was directed by Col. John L. Owens, director of veterinary service at the school. He was assisted by officers in charge of the ROTC units at the veterinary schools: Col. William E. Jennings, Cornell; Lt. Col. Charles E. Robinson, Ohio; Lt. Col. Alpheus H. Seeley, Iowa; Lt. Col. Donald C. Kelley, Kansas; Major Harold M. Deane, Colorado; and Major Walter T. Carll, Pennsylvania.

The first three weeks of the encampment were devoted to a study of the military procedures in veterinary medicine and the latter weeks to practical demonstration of

*—U. S. Army Photograph*

**Fig. 2—Veterinary cadets, on a visit from Medical Field Service School to King Ranch, examine some of the heifers of the Santa Gertrudis breed developed at the ranch.**

—U. S. Army Photograph

Fig. 3—Shown at the Kerrville Agriculture Experimental Station, veterinary ROTC cadets from Medical Field Service School watch a biopsy on a sheep performed by one of the station's veterinarians. The operation removes a section of skin to determine the effect of certain types insect sprays on sheep and cattle intended for human consumption.

—U. S. Army Photograph

Fig. 4—Veterinary cadets on tour of a local creamery near Medical Field Service School examine agar plate cultures used to take the bacterial count in milk samples.

—U. S. Army Photograph

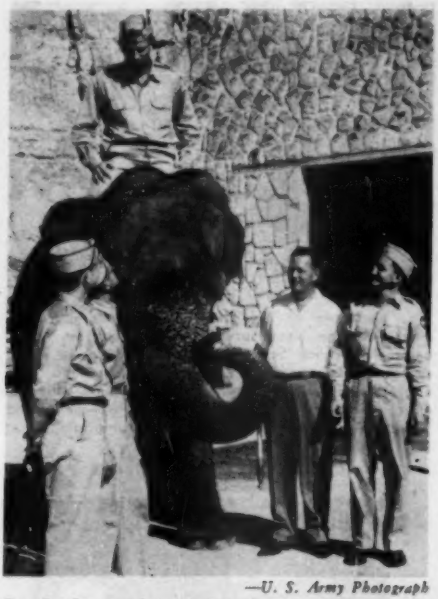
Fig. 5—Information on the training of war dogs was one of the subjects included in the veterinary ROTC training at Medical Field Service School. Shown above are Lt. Col. A. H. Seeley (left), Capt. Roland H. Ostrander (holding leash), and cadets Floyd A. Boeken and Lowell D. Breeden of Kansas State College. Sire of the German Shepherd dog shown was a war dog of World War II.

*—U. S. Army Photograph*

Fig. 6—The Army's oldest horse, 43-year-old Pat, has his teeth examined by cadets in ROTC veterinary training at Medical Field Service School. Cadets (left to right) Arthur O. Lindblom, Robert C. Nelson, Stanley H. Hull, Donald H. Fritz, and Louis H. Jacobsen (Cornell University).

*—U. S. Army Photograph*

Fig. 7—Veterinary cadets from Medical Field Service School examine the lame foot of Assault, leading race horse winner of 1946 who was put out to pasture because of his defect. He is owned by King Ranch.



*—U. S. Army Photograph*

Fig. 8—Care and treatment of zoo animals was the subject of discussion during a tour of the San Antonio Brackenridge Park Zoo by veterinary cadets from Medical Field Service School. Mr. Fred W. Stark, zoo manager (right), talks to cadets L. A. Godfiner (Cornell), K. W. Gray (Iowa State), J. Fester, on elephant (Iowa State), and J. Croshaw (Cornell).

food inspection, plant sanitation, physical examination of animals, and forage inspection.

Tours of dairies, ranches, the Kerrville Agricultural Experimental Station, and other points near Medical Field Service School, located near San Antonio, showed the cadets the various phases of veterinary medicine as applied at military and civilian installations. The highlight of the last week of training was a three-day trip to King Ranch, notable as one of the largest ranches in the world. Cadets had opportunity here to see veterinarians at work among some of the nation's finest breeds of cattle and horses.

At the completion of the encampment, three Ohio State June, 1951, graduates, Drs. Warren L. Jones, Russell L. Toops, and Charles H. Armstrong, received their reserve commissions as second lieutenants in the Army Veterinary Corps. All the cadets, upon their graduation from veterinary schools, will be qualified for reserve commissions in the Army or the Air Force.

# Plans of a Large and Small Animal Hospital

A. F. HAYES, D.V.M. and G. M. WRIGHT, D.V.M.

*Billings, Montana*

IN RESPONSE to the editorial in the August, 1951, JOURNAL (p. 142), we submit our hospital plans and specifications. As in all building, there are things which we have changed, and some we would like to alter but have not. But in the main, Dr. Wright and I are of the opinion that, with our location opposite the stockyards on a main street and highway, we have a compact and practical layout on an area no larger than 75 ft. (front) by 165 ft. (depth).

The hospital, as previously planned, was built in three stages. First, the main office building was built, with a large reception and dispensing area, a private office where clients have the freedom of talking over their private problems, and the minimum small animal facilities. Concrete blocks were used with stucco on the outside and plaster on the inside. A drain was placed in every room except the private office. No wooden floors or other nonpermanent building materials were used. At first, a half basement was planned, but it was explained to us that a full basement would not add much expense. This advice was followed and we think a full basement should be planned on any construction which considers a basement at all. The primary structure was built in 1945 at a contract price of about $12,000, not counting the equipment.

Drs. Hayes and Wright are the owners of the veterinary hospital in Billings, Mont.

## THE LARGE ANIMAL UNIT

The second unit built was the large animal hospital, the approximate cost of which was $9,000. While small in the total number of animals that it will accommodate at one time, we found it adequate to start with but would enlarge it now if more land

Fig. 1—Front view of the Billings, Mont., hospital.

were available. More stalls and corral space would be desirable.

I believe one of the main points to be kept in mind in the use of large animal facilities is to have an adequate staff so that the majority of animals brought in are treated or operated on immediately and discharged as soon as posible. Many of our surgical patients are sent home the same day they are admitted. There is a considerable disadvantage in keeping animals longer than necessary. Service that can not be done economically for the owner is detrimental to the veterinarian. We use our hospital mostly for surgical treatments, particularly those that are not practical or economical for either the owner or veterinarian to do in the country.

### THE SMALL ANIMAL ADDITION

The small animal hospital has been successful due to the fact that more service is rendered and better work is accomplished. A veterinarian is always available and good business practice is followed. These same things hold true in successful large animal hospitals.

The small animal addition was completed this spring at the approximate cost of $11,000. When we added this structure, it became necessary to add another veterinarian to the staff. When we had three veterinarians, our small animal business suffered because clients never seemed to get the same veterinarian twice, and even though cards were made out, it was disconcerting to the clients as well as to the veterinarian who had not seen the case before.

Our outside business had kept us from having one man in charge. Our small animal practice had not been built up to the extent that it would support one veterinarian because facilities were not adequate; therefore, by adding the fourth veterinarian and increasing our small animal facilities, we hope to have that end of the practice doing better than holding its own. I am sure that this will come about strictly by having one man responsible and available for this work. In the planning of this small animal addition, we gave the book put out by the American Animal Hospital Association to our architect so that he could have some idea of the problems to be dealt with, such as ventilation, air, light, and easy cleaning.

*(Continued on p. 423.)*

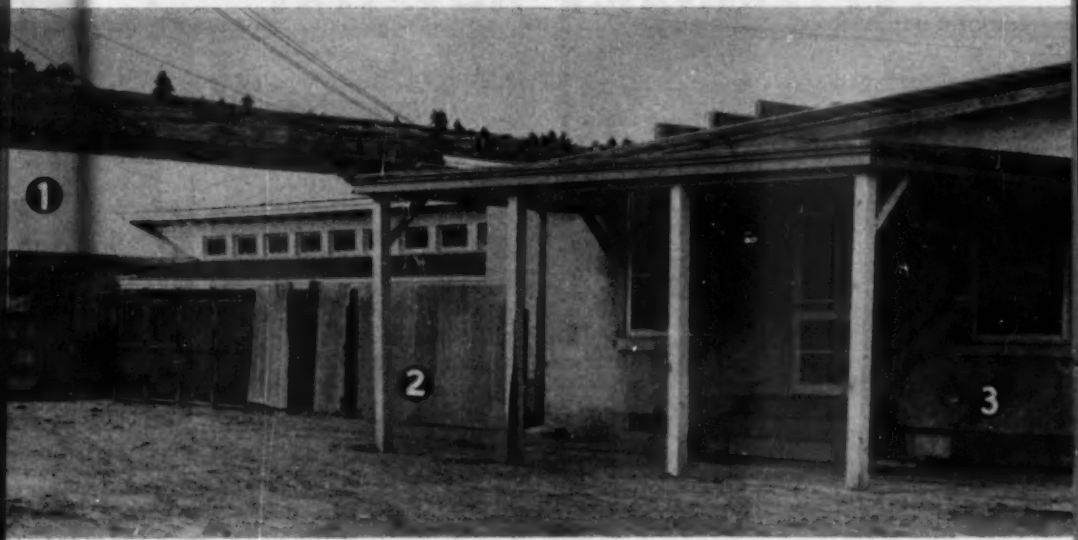



Fig. 2—Side view of (1) large animal hospital; (2) small animal ward and runs; (3) small animal hospital and office building.

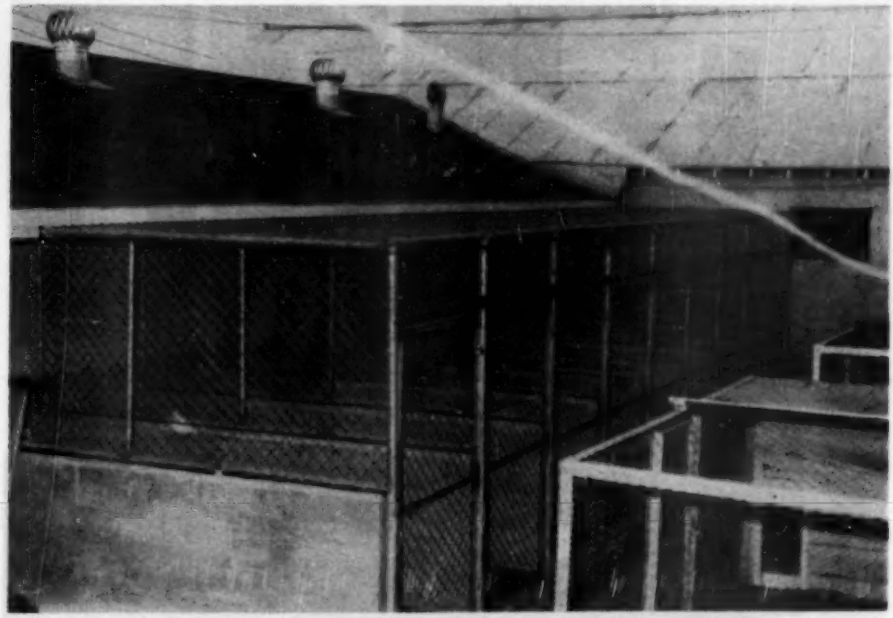


Fig. 3—The small animal ward and exercise runs of the hospital.

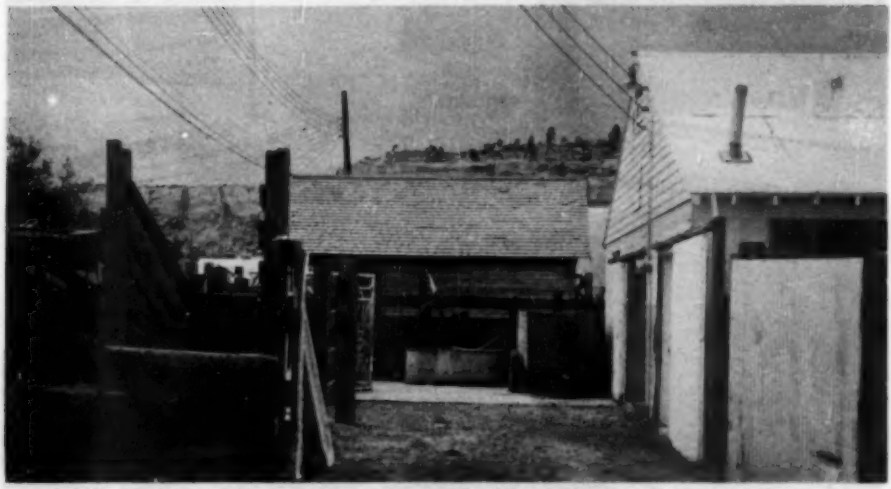


Fig. 4—Unloading chute and corral in conjunction with the large animal hospital (right).

Fig. 5—Interior of the office of the hospital.

Fig. 6—The small animal surgery in the Billings hospital.

### ECONOMIC INFLUENCES MUST BE CONSIDERED

In any discussion of the economics of these combination clinics, the matter that comes foremost to mind is the surrounding factors that affect veterinarians. The two prime factors in this western ranch area are the distances involved in making calls and the economic value of the animal in the rancher's or farmer's opinion. There are many days in this area when it is physically impossible to make more than three or four calls. I believe that if statistics were kept, it could be shown where veterinarians in many of the western areas can not make, on an average, over four calls a day during some periods of the year. In the spring and fall, a veterinarian may have as many as 15 or 20 calls but be able to take care of only half of them properly. As everyone knows, a rancher divides all expenses against the animals sold and it does not take long to figure out what can be put into an animal before the profit is gone. Because of this custom, he is much more prone to sell an animal if it needs medical care rather than risk the expense of a call by a veterinarian.

This custom immediately limits the veterinarian in this ranch country and we believe that the clinic-hospital plan is part of the answer, in so far as it allows a livestock owner to consult a veterinarian when he needs one; a decision is reached at the time on what is best to do without any expense. It takes the veterinarian "off the spot" of trying to solve an economically unsound proposition after a 30 or 40 mile trip or even longer, and there is no time wasted. By being available at a clinic, it is practical to dispense medicine for any small consultations, with the reminder to the client that if such and such should happen, the animal should be brought in or the veterinarian should be called to see the patient. In that way, we feel we

Fig. 7—The laboratory in the animal hospital.

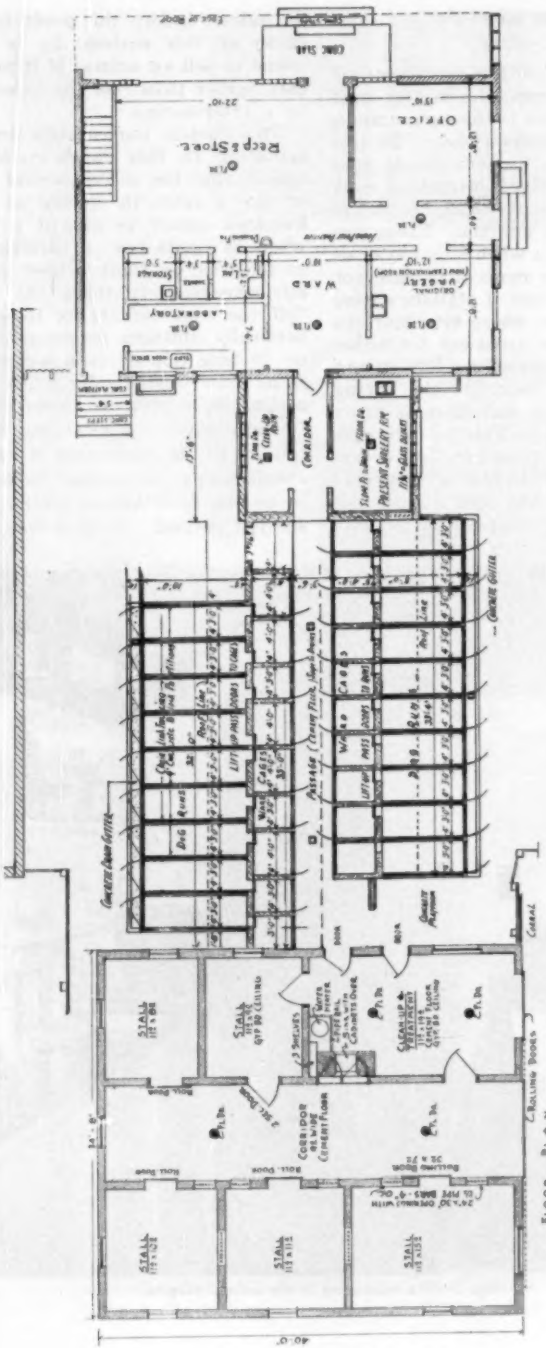



Fig. 8—Floor plans of the three units of the complete hospital (large and small animal hospital) at Billings, Mont., owned by Drs. A. F. Hayes and G. M. Wright.

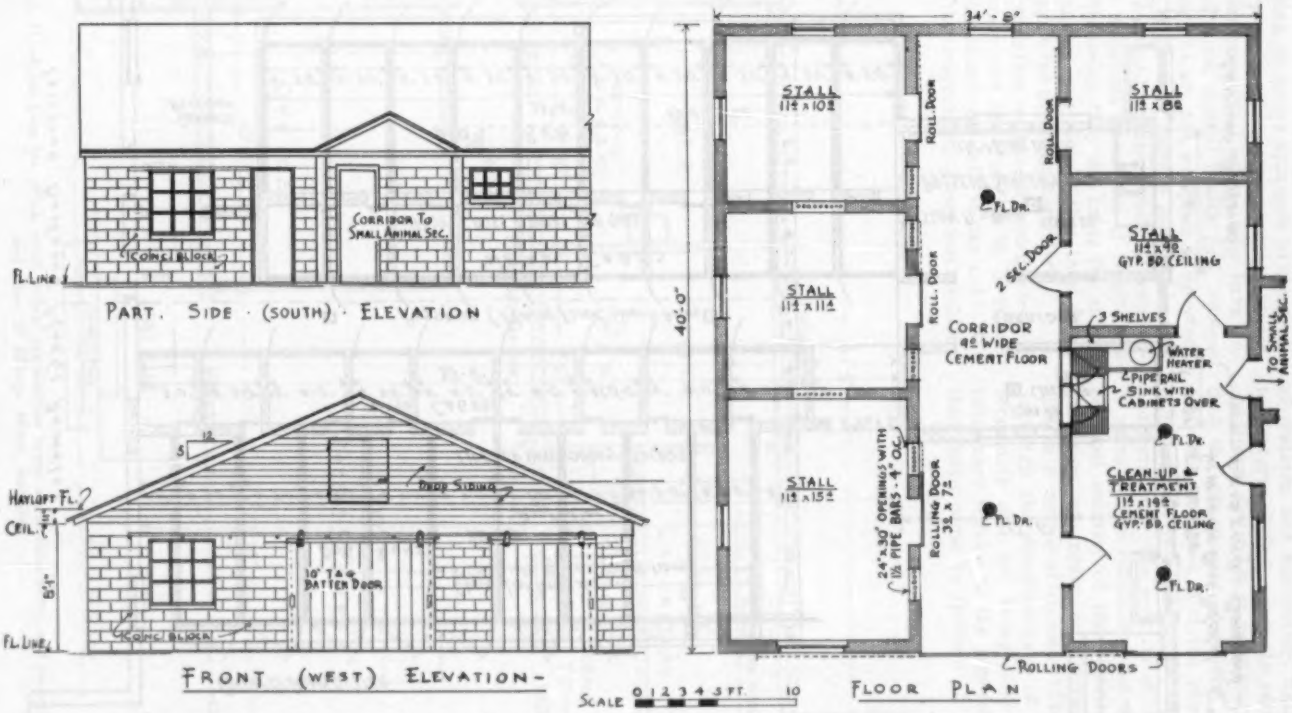



**Fig. 9—(Left) Front and side elevations of animal hospital at Billings, Mont. (Right) Floor plan of large animal hospital unit.**

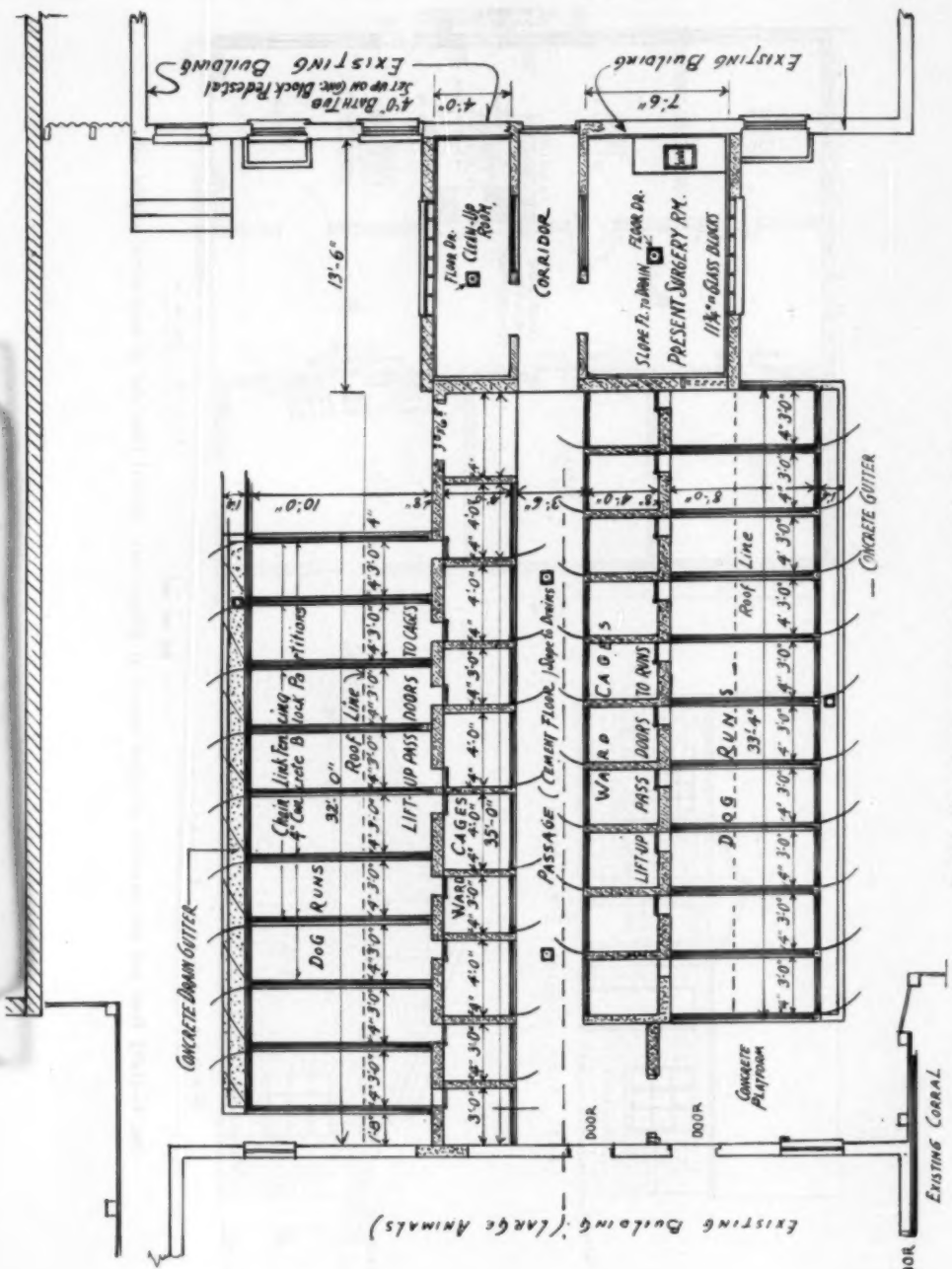



Fig. 10—Floor plan for ward, exercise runs, and hospital runs.

are taking an active approach to the problem presented by drug stores, general stores, feed companies, and others who have encroached upon animal health just because veterinarians are not available to livestock owners when they have a problem to talk over. We find that clients hold us responsible for dispensed items and if results are not forthcoming, they will bring the animal in, or call us out; would that they would do the same for the drug store clerk.

It is true that we have invested considerable money and the question is, Is it economically sound and will it pay out? We believe by overcoming these two problems of distance and availability, by being able to perform skilled, adequate service under conditions favorable to veterinary practice, that the practice is increased, better results are obtained, and the physical well-being of the veterinarian is safe-guarded and enhanced. The security of the practice is more firmly established as well as the personal security of the veterinarian. In the event of injury or incapacity, there still is a source of income. These things outweigh the disadvantages of practicing separately and not being able to render veterinary service to the general public as they have come to demand it, nor being

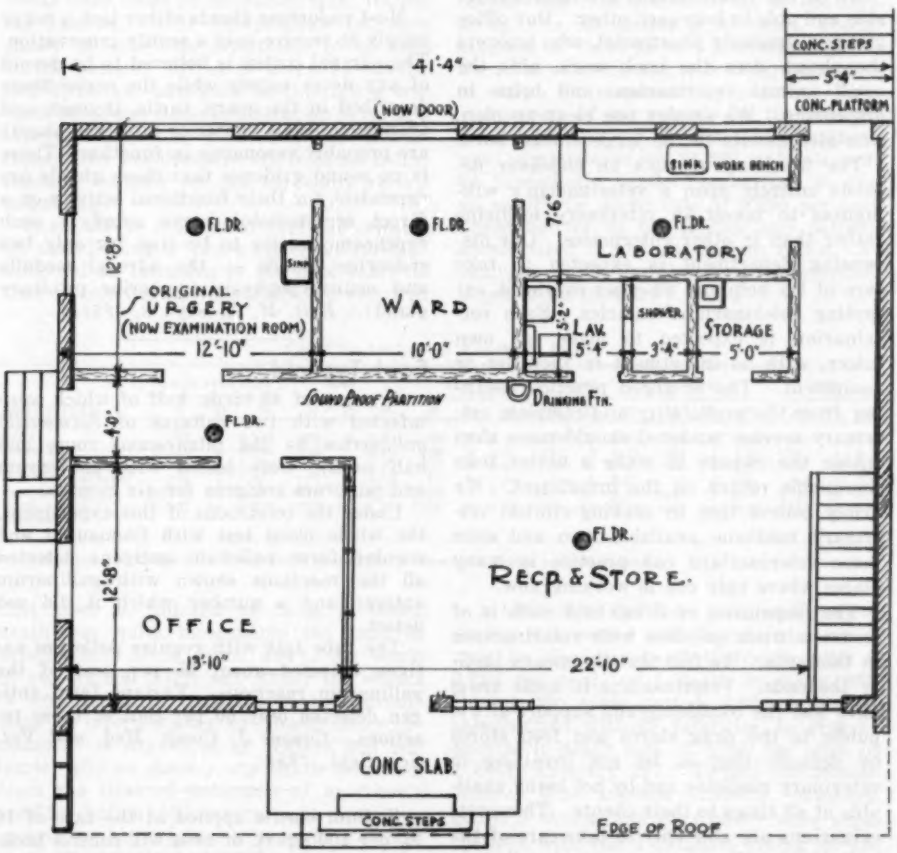



Fig. 11—Floor plan for office, small animal examination room, ward, laboratory, and reception room and store of Billings, Mont., hospital.

able to render complete veterinary service to the individual client.

DIVISION OF PRACTICE

Our clinic is staffed and the work is divided generally in the following manner.

One veterinarian is responsible for the small animal clinic and the dispensing of drugs.

One man does state regulatory work and some practice in conjunction with such work.

One takes care of the stockyards and large animal hospital work.

One takes outside calls and large animal hospital work when available.

All of the veterinarians are interchangeable and able to help each other. Our office girl is a graduate pharmacist, who answers the phone, does the book work, aids the small animal veterinarian, and helps in dispensing. We employ one clean-up man, who also assists in the large animal barn.

The financing of such an endeavor depends entirely upon a veterinarian's willingness to invest in veterinary medicine rather than in other enterprises. Our dispensing department is expected to take care of lay help and all other overhead, excepting veterinarians' salaries. Each veterinarian is expected to make his own salary, with no investment in facilities or equipment. The enlarged practice resulting from the availability and complete veterinary service rendered should more than enable the owners to make a better than reasonable return on the investment. We firmly believe that by making clinical veterinary medicine available, two and even three veterinarians can practice in many places where only one is working now.

The dispensing of drugs and such is of course a moot question with veterinarians in this area. We feel that the means justify the ends. Veterinarians in some areas have lost the confidence and support of the public to the drug stores and feed stores by default—that is, by not investing in veterinary medicine and by not being available at all times to their clients. These veterinarians are able only to take care of the individual calls that can be handled to their own satisfaction.

## Award for Outstanding Research in the Field of Infertility

The American Society for the Study of Sterility announces the opening of the 1952 contest for the most outstanding contribution to the subject of infertility and sterility. The winner will receive a cash award of $1,000, and the essay will appear on the program of the 1952 meeting of the Society. Essays submitted in this competition must be received not later than March 1, 1952. For full particulars concerning requirements of this competition, address The American Society for the Study of Sterility, 20 Magnolia Terrace, Springfield, Mass.

## Neural Control of the Pituitary Gland

Most endocrine glands either lack a nerve supply or receive only a scanty innervation. The adrenal cortex is believed to be devoid of any nerve supply while the nerve fibers described in the ovary, testis, thyroid, and adenohypophysis (anterior pituitary gland) are probably vasomotor in function. There is no sound evidence that these glands are dependent for their functional activity on a direct secretomotor nerve supply: such dependency seems to be true for only two endocrine glands — the adrenal medulla and neurohypophysis (posterior pituitary gland).—*Brit. M. J., Sept. 8, 1951.*

## Fowl Typhoid

A group of 48 birds, half of which were infected with two cultures of *Salmonella gallinarum* by the intravenous route and half orally, were tested with gallinarum and pullorum antigens for six months.

Under the conditions of this experiment, the whole blood test with Connaught and regular form pullorum antigens detected all the reactions shown with gallinarum antigen and a number which it did not detect.

The tube test with regular pullorum antigen detected about 95 per cent of the gallinarum reactions. Variant form antigen detected only 60 per cent of these reactions.—*Canad. J. Comp. Med. and Vet. Sci., Sept., 1951.*

Sodium borate applied at the rate of 10 lb. per 100 sq. ft. of area will control hookworm larvae.—*J. W. Bernotavicz, Director, Gaines Research, Illinois.*

SURGERY & OBSTETRICS
AND PROBLEMS OF BREEDING

# Anesthetic Mortality: A Five-Year Survey of the Records of the Angell Memorial Animal Hospital

DUANE T. ALBRECHT, D.V.M. and C. LAWRENCE BLAKELY, V.M.D.

*Boston, Massachusetts*

THIS REPORT COVERS our work with anesthesia from 1946 through 1950. The patients were those of the entire staff, including interns. It is the practice for each doctor to select the anesthetic to be used on his patient. Ether is given by inhalation from an open cone or through a tracheal tube, and its administration is usually supervised by one of several lay technicians. The barbiturates are injected intravenously, usually by one especially skilled technician.

It should be mentioned that the criteria for establishing a "death under anesthesia" were not so inclusive in the first years as later in our work. Originally, we required that cases so indexed be those in which death was quite inescapably the fault of anesthesia. Since June, 1949, the death of any animal while still under the effects of anesthesia is included in this group. Such an interpretation of "death under anesthesia" is suggested by Waters and Gillespie[1] who so classify any death occurring from the time of induction of anesthesia until the patient either returns to consciousness or to his original preoperative condition. Anesthetic deaths, therefore, may be due to (a) the anesthetic, (b) the surgical procedure, (c) the condition of the patient, or (d) any combination or all of the foregoing. In the majority of cases, a combination of these factors is responsible for the fatal outcome and it is often impossible to assign the responsibility exactly.

A survey of our records for the past five years (1946-1950) reveals that anesthesia was administered to 21,597 animals with 64 "anesthetic deaths" occurring, to give an anesthetic death rate of 0.295 per cent. These figures do not include any patients anesthetized in the out-patient clinic. An analysis of the hospital cases anesthetized is presented in chart 1.

Chart 1—Analysis of Anesthetic Deaths

| | Totals 1946-1950 | | | 1946 | | | 1947 | | | 1948 | | | 1949 | | | 1950 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ANESTHETIC | A | D | % | A | D | % | A | D | % | A | D | % | A | D | % | A | D | % |
| Ether | 577 | 3 | 0.519 | 130 | 0 | 0.0 | 98 | 0 | 0.0 | 120 | 1 | 0.83 | 116 | 1 | 0.89 | 113 | 1 | 0.89 |
| Pentothal | 3,828 | 6 | 0.156 | 328 | 2 | 0.61 | 548 | 0 | 0.0 | 757 | 1 | 0.13 | 983 | 2 | 0.21 | 1182 | 1 | 0.09 |
| Pentothal-ether | 212 | 1 | 0.47 | 55 | 1 | 1.81 | 32 | 0 | 0.0 | 30 | 0 | 0.0 | 68 | 0 | 0.0 | 27 | 0 | 0.0 |
| Pentobarbital-ether | 235 | 4 | 1.71 | 77 | 2 | 2.59 | 61 | 1 | 1.64 | 31 | 0 | 0.0 | 50 | 0 | 0.0 | 14 | 1 | 7.15 |
| Pentobarbital | 16,747 | 50 | 0.29 | 3689 | 6 | 0.16 | 3539 | 11 | 0.31 | 3421 | 10 | 0.34 | 2957 | 13 | 0.44 | 3141 | 10 | 0.31 |
| Total — all anesthetics | 21,597 | 64 | 0.295 | 4279 | 11 | 1.26 | 4328 | 12 | 0.28 | 4359 | 12 | 0.28 | 4154 | 16 | 0.39 | 4477 | 13 | 0.29 |

A = Number anesthetized; D = anesthetic deaths; % = anesthetic deaths per 100 animals.

A total of 14,640 dogs were anesthetized during this period with 38 fatalities occurring to give an anesthetic death rate of 0.259 per cent, or 1 death in every 385. During the same period, 6,936 cats were anesthetized with 25 fatalities, to give an anesthetic death rate of 0.360 per cent, or 1 death in every 277. Twenty-one miscellaneous type animals (rabbits, monkeys, goats, a skunk, and a raccoon) were anesthetized with but 1 fatality, giving an anesthetic death rate of 4.762 per cent, or 1 death in 21. These figures would seem to indicate that there definitely is more risk

Dr. Albrecht is an intern and Dr. Blakely is the director of surgery at the Angell Memorial Animal Hospital in Boston, Mass.

involved in anesthetizing cats than dogs.

The average age of animals listed as anesthetic fatalities was 5 years, with a range of 12 weeks to 14 years. Deaths were almost evenly divided between both sexes, there being 29 males and 32 females; the sex of 3 animals was not recorded.

TABLE 1—Ether Fatalities

| Animal | Sex | Age | Condition |
|---|---|---|---|
| Cat | M | 7 yr. | Urinary Calculi |
| Cat | M | 3 yr. | Urinary Calculi |
| Cat | M | 3 yr. | Urinary Calculi |

The ether fatalities, 3 in number, were male cats, three years of age or older, all suffering with urethral calculi and engorged bladders (table 1). Two of the 3 were inappetent and uremic. One was vomiting

TABLE 2—Pentothal Fatalities

| Animal | Sex | Age | Condition |
|---|---|---|---|
| Pug | M | 12 yr. | Ascites, dental disease |
| Pekinese | F | 7 yr. | Dental disease |
| Irish Terrier | M | 10 mo. | Laceration |
| Shepherd type | M | 8 mo. | Pelvic fracture, internal injuries |
| Cat | M | 5 yr. | Urethral calculi |
| Cat | M | 14 yr. | Femoral fracture |

and had a temperature of 99.4 F. The other had been straining for two days. It thus appears that 2, at least, were poor anesthetic risks.

TABLE 3—Pentothal-Ether Fatalities

| Animal | Sex | Age | Condition |
|---|---|---|---|
| Terrier type | F | 4 yr. | Dystocia |

Of the pentothal fatalities, 4 were dogs and 2 were cats (table 2). The first was a 12-year-old male Pug suffering from alveolar periostitis, ascites, and impacted anal glands. The second, a 7-year-old female Pekinese, had alveolar periostitis, dental tartar, and fetid breath. The other 2 dogs in this group were males, 8 and 10 months old. Both were admitted after being struck by cars. One of them was brought to the hospital bleeding from a laceration and was taken immediately to the operating room where he was given pentothal and promptly died. The other was hospitalized for two days, then given 150 cc. of blood intravenously and pentothal five minutes later. It died in the operating room. Postmortem examination revealed a ruptured kidney and bladder as well as a fractured pelvis.

TABLE 4—Pentobarbital-Ether Fatalities

| Animal | Sex | Age | Condition |
|---|---|---|---|
| Beagle | M | 4 yr. | Internal injuries, ventral hernia |
| Yorkshire Terrier | F | 9 yr. | Pyometra, mammary tumor |
| Terrier type | F | 4 mo. | Spay |
| Terrier type | F | 2 yr. | Dystocia, cesarean |

Of the 2 cats in this group, the 5-year-old male had a history of recurrent urethral calculi and had been straining and passing blood in the urine for three days. The 14-year-old was also a male which had been hospitalized one year previously for chronic nephritis. He had suffered a femoral fracture three days before admission and his general condition on entry was poor. Subcutaneous injection of 75 cc. of 5 per cent dextrose was given preoperatively, anesthesia was administered, and a temporary splint was applied. Death occurred during the period of recovery from anesthesia.

It appears from the figures in chart 1 that pentothal is the safest of all anesthetics used at our hospital (0.156% death rate). It should be remembered that pentothal is used many times for very minor surgical procedures and for sedation in nervous patients that are to be x-rayed. However, pentothal is often used on poor anesthetic risks when anesthesia is absolutely necessary and pentobarbital is considered entirely too dangerous. The period of anesthesia is relatively short with pentothal, materially aiding resuscitation in patients with respiratory or cardiac embarrassment. In any event, the 0.156-per cent death rate (or 15 deaths in 10,000 animals anesthetized) is certainly the lowest figure for all methods employed.

One animal, a 4-year-old female mongrel Terrier, was a pentothal-ether fatality (table 3). She had whelped 1 pup at 8 p.m. Another pup was removed with forceps at midnight and then 1 cc. of pituitrin was given to stimulate normal delivery. The bitch died during cesarean section the following morning.

On examination of chart 1, a marked annual decline is noted (except in 1949) in the use of pentobarbital-ether combination. This can probably be attributed to the increased use of demerol to prolong pentobarbital anesthesia. The demerol-pentobarbital combination has been found safer than an ether-pentobarbital combination in the hands of our anesthetists.[2]

The first animal (table 4), a 4-year-old male Beagle, was admitted after being struck by an automobile. He was given a blood transfusion on entry and preoperatively the next day. Shock, internal injuries, and ventral hernia were the tentative diagnosis. The animal died while undergoing herniorrhaphy and intestinal anastomosis. The second was a 9-year-old Yorkshire Terrier female with a tentative diagnosis of pyometra and mammary tumor. She had had pseudocyesis (false pregnancy) and a lump in the breast two years previously. A recent tumor of the breast was noted on examination at entry. The dog had not been feeling well even though the temperature was normal and the general condition good. The last heat period occurred one month before entry. The bitch died during oöphorohysterectomy, in the course of which a sudden attack of dyspnea was followed by respiratory and finally circulatory failure. Oxygen, metrazol, and adrenalin were administered to no avail. The third animal was a 4-month-old mongrel female Terrier admitted for spaying. The dose of pentobarbital did not produce satisfactory anesthesia, so ether was given. After routine ligation of the right horn of the uterus, she stopped breathing and the heartbeat stopped. Adrenalin (1 cc.) was given intracardially, oxygen was administered intratracheally, and the heart was massaged through the thoracic wall with no results; the adrenalin was repeated without effect. The fourth animal, a 2-year-old Terrier-type female, had been in labor for three days prior to admission. Live pups were palpated on entry at 11:00 a.m. and 1 cc. of pituitrin was given. A cesarean section was performed at 3:00 p.m. the same day and 5 dead and 2 live puppies were removed. The bitch died during the operation.

Pentobarbital fatalities are assigned arbitrarily in table 5 to five major classes: trauma, abscess, spay, foreign body, and miscellaneous. Pitfalls of such a classification are obvious but the anesthetic deaths in this group are too numerous (50) to discuss individually.

Referring to chart 1, we see that the percentage of anesthetic deaths is 0.29 per cent of the 16,747 animals anesthetized with pentobarbital. Of the 50 fatalities occurring in this group, 12 animals were definitely considered to be good anesthetic risks as far as could be determined from the case records on the hospital ward cards. (A double asterisk in table 5 identifies these 12 cases.)

**TABLE 5—Pentobarbital Fatalities**

| Animal | Sex | Age | Condition |
|---|---|---|---|
| **TRAUMA (16)** | | | |
| Short-Haired Fox Terrier | F° | 5 yr. | Diaphragmatic hernia |
| Wire-Haired Fox Terrier | F | 1 yr. | Diaphragmatic hernia |
| Cocker Spaniel | M | 2 yr. | Diaphragmatic hernia |
| Wire-Haired Fox Terrier | F | 1 yr. | Diaphragmatic hernia |
| Irish Terrier | M | 1 yr. | Diaphragmatic hernia |
| Cat | M | 1 yr. | Diaphragmatic hernia |
| Boston Terrier | M | 8 yr. | Perineal hernia |
| Boston Terrier | M | 7 yr. | Perineal hernia |
| Short-Haired Fox Terrier | M | 12 yr. | Ventral hernia |
| Spitz | F | ? | Ventral hernia |
| Cat | M | 2 yr. | Internal injuries, sprain left foreleg |
| Cat | ? | 3 mo. | Pelvic fracture, skin wound |
| Collie type | M | 6 mo. | Femoral fracture |
| Cat | M | 10 yr. | Posterior paralysis |
| Wire-Haired Fox Terrier | F | 8 yr. | Skin-subcutaneous laceration |
| Toy Collie | M | 2 yr. | Laceration, tail |
| **SPAY (11)** | | | |
| Terrier type | F | 2 yr. | Dystocia, cesarean |
| Cat | F | 1 yr. | Acute metritis |
| Cat | F | 2 yr. | Dystocia, history of metritis |
| Cat | F | 2 yr. | Dystocia, gangrenous metritis |
| Boston Terrier | F | 6 yr. | Pyometra |
| Cat | F | 4 yr. | Pyometra |
| English Setter | F | 9 yr. | Sterilization, mammary tumor removed at same time |
| Cat** | F | 1 yr. | Sterilization |
| Cat** | F | 8 mo. | Sterilization |
| Cat** | F | 5 mo. | Sterilization |
| Cat | F | 5 mo. | Sterilization |
| **ABSCESS** | | | |
| Cat | M° | 4 yr. | Neck region infection |
| Boston Terrier** | F° | 4 yr. | Anal gland infection |
| Collie type | M | 8 yr. | Skin-subcutaneous bite wound |
| Cat** | F | 6 yr. | Skin-subcutaneous |
| Cat** | M | 1 yr. | Skin-subcutaneous |
| Spitz-Pomeranian** | F | 6 yr. | Anal gland infection |
| **FOREIGN BODY (4)** | | | |
| Cocker Spaniel | M | 2 yr. | Intestine |
| Irish Terrier** | M | 2 yr. | Esophagus |
| Cat** | F | 9 yr. | Mouth and dentistry |
| Boston Terrier | F° | 11 yr. | Throat and cardiac disease |
| **MISCELLANEOUS (13)** | | | |
| Cat | M | 16 yr. | Dental fistula |
| Cat | F° | 5 yr. | Dentistry |
| Boston Terrier | M | 12 yr. | Abdominal tumor |
| Chow | F° | 14 yr. | Mammary tumor |
| Boxer | F | 1 yr. | Dermoid cysts |
| Cocker Spaniel | F | 4 yr. | Osteomyelitis |
| Terrier type | M | 9 yr. | Nonunion left tibia |
| Rabbit** | ? | ? | Grooming and nail trim |
| Short-Haired Fox Terrier | F | 9 mo. | No diagnosis |
| Cat | M | 2 yr. | Constipation |
| Cat** | F | 2 yr. | Bilateral entropion |
| Scottish Terrier | F | 2½ yr. | Hemorrhagic cystitis, cystic calculi |
| Boxer** | M | 12 wk. | Contracted tendons |

**Considered to be good surgical risks; F° = spayed female; M° = castrated male.

It is hazardous to attempt a conclusion regarding the relative merits of the several anesthetics or anesthetic combinations used. Pentothal would appear, according to the statistics, to be the safest but, as noted

previously, it is used frequently and with very little risk for minor surgical procedures and sedation. Pentobarbital, on the other hand, is perhaps relatively safer than the figures suggest because, by and large,

TABLE 6—Summary of All Fatalities According to Diagnosis

| Diagnosis | Fatalities (No.) |
|---|---|
| Trauma | 20 |
| Spay—for disease or pregnancy | 9 |
| for sterilization | 6 |
| Abscess | 6 |
| Urethral calculi | 5 |
| Foreign body | 4 |
| Dentistry | 4 |
| Miscellaneous | 10 |

the patient's condition is poorer and the surgical procedure more serious than in the cases where pentothal is employed. Ether also may actually be safer than our figures suggest, for 2 of the 3 fatalities were poor anesthetic risks. Moreover, the total of animals anesthetized with ether

TABLE 7—Breed Incidence—All Anesthetics

| Breed | No. | Breed | No. |
|---|---|---|---|
| Fox Terrier | 6 | Scottish Terrier | 1 |
| Boston Terrier | 6 | Toy Collie | 1 |
| Terrier type | 5 | Spitz | 1 |
| Cocker Spaniel | 3 | Spitz-Pomeranian | 1 |
| Boxer | 2 | Pug | 1 |
| Collie type | 2 | Pekinese | 1 |
| Irish Terrier | 2 | Shepherd type | 1 |
| English Setter | 1 | Beagle | 1 |
| Irish Setter | 1 | Yorkshire Terrier | 1 |
| Chow | 1 | | |
| Total dogs | | | 38 |
| Cats | | | 25 |
| Rabbit | | | 1 |
| Total | | | 64 |

as recorded in chart 1 does not include the considerable number of cats safely castrated under ether in the out-patient clinic. Another conclusion suggested by the figures is that when ether is used in combination with either of the barbiturates, the risk involved is considerably increased. The effect of the further respiratory depression produced by ether has been obviated in recent years, as mentioned previously, by substituting demerol.

Perhaps the greatest risk in the use of ether lies with the anesthetist. It is not easy to train a person, lay or professional, to devote the continuous, individual attention necessary for safe inhalation anesthesia. Too often fatalities have resulted from wandering interests on the part of the person administering the ether.

It is interesting to total all anesthetic fatalities according to diagnosis. Table 6 is such a summary and it indicates that 20 (32%) of the animals dying anesthetic deaths suffered from traumatic conditions. Interestingly enough, 10 (26.9%) of the 37 dogs dying anesthetic deaths (table 7) were of the brachiocephalic variety (Boxer, Pug, Pekinese, Boston Terrier). The high incidence of deaths in Fox Terriers can probably be explained by the fact that 5 of the 6 were suffering from traumatic conditions. We recognize that this analysis (table 7) is invalidated to a considerable degree by our inability to show the normal breed incidence in the total dog population.

## Comparison with Anesthetic Death Rates in Man

Medical literature on human beings offers little of specific value for comparison with the findings at our hospital. In Bishop's[3] report on operating-room deaths in seven hospitals distributed over the world, the number of operating-room fatalities (*i.e.*, anesthetic deaths) varied from 1 in 503 to 1 in 1,858. Waters and Gillespie[1] review the anesthetic deaths among 44,891 surgical patients. Of these patients, 47 (1 in 955) died anesthetic deaths. These figures do not include patients anesthetized for minor surgical procedures but do include those on whom spinal anesthesia was used. It should be noted that few of the deaths reported by them occurred with anesthetic agents commonly employed in veterinary medicine. H. S. Ruth and co-workers (Anesthesia Study Commission)[4] found in an analysis of 306 anesthetic deaths that nearly 50 per cent were preventable.

In our analysis of 21,597 animals anesthetized, 64 died while under anesthesia, or 1 in 337.5 (2.95 deaths per 1,000). We feel that, while some of our anesthetic deaths could have been prevented, our higher death rate may perhaps be attributed to the fact that it is not economically possible to utilize the wide range of anesthetic agents available in human medicine nor the services of an anesthetist throughout each operation.

## Comment

One of our deficiencies as a profession is failure to acquire accurate vital statistics. The reasons for this neglect are many and obvious, but the obstacles are not insurmountable. Faced for years with this

problem, the Angell Memorial Animal Hospital adopted in 1946 the "Standard Nomenclature of Disease and Operations" of the American Medical Association as the basis for indexing the hospital records. With a few minor changes the "Standard Nomenclature" is completely applicable to our practice. Records acquired under this regime have been an invaluable source of statistical information and, moreover, are standardized and readily assembled.

Due to a lack of similar reports in veterinary literature, comparison with the work of others is not possible. Suggestions and criticism from others interested in anesthesiology are invited.

SUMMARY

A study of mortalities under anesthesia for a five-year period is offered with an attempt to describe in brief detail certain contributing factors and to evaluate the relative merits of the anesthetics or anesthetic combinations employed.

**References**

[1]Waters, R. M., and Gillespie, N. A.: Deaths in the Operating Room. Anesthesiology, *5*, (1944): 113-128.

[2]Schnelle, G. B.: Demerol as an Adjunct to Surgical Anesthesia. Vet. Excerpts, *9*, (1949):138-139.

[3]Bishop, H. F.: Operating Room Deaths. Anesthesiology, *7*, (1946): 651-662.

[4]Ruth, H. S., *et al.*: Anesthesia Study Commission: findings of 11 years activity. J.Am.M.A., *135*, (1947):881-884.

## Arterial Grafts in Small Arteries

The need for a satisfactory method of bridging defects created by injuries of major arteries has long been recognized. The collateral circulation of a number of regions of the body is inadequate to maintain viability when the principal artery of supply to the region has been destroyed or blocked. This is particularly true in cases where the main artery to the leg is acutely interrupted. Experience with arterial injuries of the lower extremities among battle casualties in World War II has amply demonstrated that collateral circulation alone can not be expected to sustain viability of tissue in a sufficient number of instances to justify only the procedure of ligation in conjunction with supportive therapy.

Arterial grafts were used in the present experiments to restore the circulation in the hind legs of dogs that had undergone an experimental acute femoral arterial injury performed by transecting the hind limb and reimplanting it.

The report is based on results in a series of 39 experiments in which the animal survived with a viable extremity and no evidence of gangrene for the critical initial two-week period following the transection-reimplantation injury. Major wound complications were uncommon and healing by first intention was the rule. In this group of 39 experiments the grafts, after sixteen days to one year, were examined postmortem.

Thirty-four, or 87 per cent, of the 39 grafts continued good function as demonstrated by dissection and arteriogram. Five of the grafts were found to be completely occluded. Abnormalities ranging from simple discoloration of the intima to a moderate degree of constriction of their lumina were apparent on gross inspection of 18 of the 34 functioning grafts. Sixteen grafts appeared essentially normal. Upon gross inspection, all of the autografts were entirely similar, both in regard to appearance and texture to the adjoining artery into which they had been implanted. Their intimal surfaces were of normal color, smooth, and glistening. On the other hand, differences in the homografts were just discernible. They were slightly stiffer, less elastic, and paler.

It is evident that autogenous grafts are highly successful in the femoral artery and may be relied upon to produce permanently satisfactory replacement structures. Homografts, fresh or preserved, survive and remain functioning for long periods of time, certainly much longer than that needed for collateral circulation to develop. Arterial grafts of all three types would be useful for bridging defects in cases of arterial injury or for replacing segments of small but essential arteries sacrificed in extensive radical surgery.—*Surg., Gynec. and Obst., May, 1951.*

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Cortisone has been reported to have an inhibitory action on wound healing.

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The risk of abortion due to vaccination of pregnant cattle with strain 19 *Brucella abortus* vaccine appears to be slight.— *Vet. Rec., April 14, 1951.*

# The Payton Uterus and Vaginal Prolapse Preventer*

JEROME PAYTON, D.V.M.

*Morris, New York*

THE ACCOMPANYING photographs illustrate a simple aluminum truss applied with ropes in a few minutes on a cow of any size to prevent a recently fresh, straining animal from prolapsing the uterus and vagina. The appliance is inexpensive, durable, light-

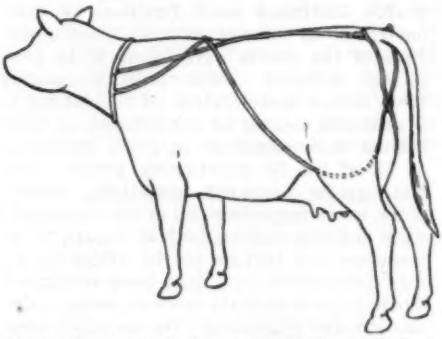

Fig. 1—Cow with aluminum truss showing method of application with ropes.

weight, and capable of being re-used many years. It is not readily contaminated by fecal and urinary discharges and is easily cleaned and sanitized. Its advantage over the all-rope harness and other metallic appliances is its simplicity and its lessened likelihood of loosening and shifting position, thus defeating its purpose. A far greater degree of safety and dependability is provided by this truss.

In the author's experience, it is useful immediately after replacing an everted uterus and vagina because it saves valuable time spent in suturing the vulva. Suturing, with resulting local infection or irritation, furthers the cause of tenesmus. In such instances as mentioned above, it is applied by the herdsman or helper before the epidural anesthesia wears off and while the veterinarian is washing and dressing. The prolapse preventer is left at the farm, and its cost is added to the fee. The dairyman is admonished always to leave the ropes on the truss for future rapid application to any cow that commences to strain unduly or is apt to evert the reproductive tract. It is a useful item for ethical dispensing. Its prophylactic attachment makes it unnecessary for the herdsman to observe closely a parturient cow showing tenesmus and threatening to evert the uterus. Security is assured until the veterinarian arrives. The uterus prolapse preventer does not interfere with the normal release of the placenta, or intestinal and bladder eliminations. Application in the evening

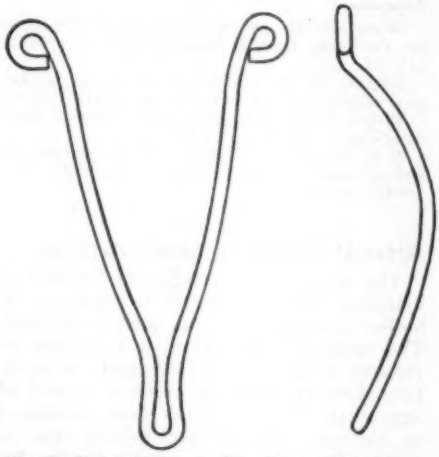

Fig. 2—(Left) Flat view showing general conformation of the prolapse preventer before application of ropes; (right) Profile view showing the concavity of the appliance to conform with the natural anatomic or topographic arrangement of the rectal and perineal regions.

permits the dairyman to feel secure, knowing that when he returns to the barn in the morning he will not find a cow dead or in serious condition with an everted, inflamed reproductive tract.

The Payton uterus and vaginal prolapse

*Patent applied for.

Dr. Payton is a general practitioner in Morris, N. Y.

preventer is applied in the following manner:

A short piece of rope is attached about the base of the neck and tied with a nonslip knot to form a snug fitting collar. To each eye of the truss, one attaches a length of rope approximately 7 ft. long and ¼ in. in diameter. Another segment of rope about 16 ft. long is threaded half its length through the apex or neck of the appliance and a knot tied in the rope to include the truss at its ventral portion. The prolapse preventer is now placed under the tail with the open end upward and the eyes on either side of the tail head. The arms closely encircle the lateral and ventral surfaces of the vulva. The two ropes from the eyes meet and cross one another over the back to tie to the right and left side of the rope collar. Each end of the rope knotted about the bottom of the truss passes between the lateral surface of the udder and the inside of the thigh of the right and left leg. They emerge at each flank where they are passed upward, forward, and across the back and one another to be tied to each side of the rope collar. Thus, all four rope segments cross each other and the spine to tie to the sides of the collar. The ropes are adjusted as to length in order to provide snug and secure adherence of the appliance about the vulva. It may be retained on the cow for days or weeks if necessary, as for a case of vaginal protrusion occurring late in the gestation period.

## Treatment of War Wounds of the Chest

In the management of 287 casualties from Korea suffering from thoracic injuries, only one death occurred; it was caused by agranulocytosis and was unrelated to operation. The application of the principles so successfully employed in World War II have been further extended with excellent results. The advancements recorded appear to be the encouraging results encountered in the use of streptokinase and streptodornase in the treatment of traumatic hemothorax and the studies of pulmonary function as an aid in evaluating surgical results, especially of pulmonary decortication. The unreliability of roentgenographic evaluation of pulmonary function has been regularly encountered but bronchospirometric methods appear to be valuable adjuncts in assessing pulmonary function following thoracic injury.—*U. S. Armed Forces M. J., June, 1951.*

## Cortisone in Wound Healing

Twenty rats received midline abdominal wounds and were kept on a standard laboratory diet. Two days before the wounding, the rats were given 40 mg. of cortisone per kilogram of body weight each day. This was continued daily for the duration of the experiment. The wounds showed suppression of healing and decrease of fibroplasia. —*Federation Proc., 10, March, 1951: 364.*

*Cortisone and Gestation.*—Studies of the influence of desoxycorticosterone on the gestation of rabbits showed that this substance can replace the corpus luteum hormone. The effects of cortisone on gestation were studied. Rabbits were given daily injections of 25 mg. of cortisone acetate. It was concluded that cortisone has a deleterious effect on the gestation of rabbits, especially if injected after the fifteenth day of pregnancy.—*J. Am. M. A., June 2, 1951.*

## Effect of Streptomycin on Fertility of Bull Semen

The addition of streptomycin calcium chloride complex in the proportion of 1,000 mg. per milliliter to the normal yolk-citrate semen diluent used in two controlled experiments involving 10,888 cows resulted in a highly significant rise in conception rate, based on the percentage of nonreturns to the first service after sixteen weeks.—*Vet. Rec., Sept. 22, 1951.*

*Contagious vaginitis and Epididymitis.* —Contagious vaginitis and epididymitis is listed as one of the important diseases in South Rhodesia. The report states: "Artificial insemination and sterility examination of the females has given the best results in eliminating the disease."— *Rep., Director of Veterinary Services, South Rhodesia, 1950.*

*Salmonella abortus equi* in the mare causes a premature expulsion of the fetus from the seventh to tenth months of gestation.—*Vet. Med., Nov., 1951.*

# CLINICAL DATA

## Gut Edema in Three Illinois Swine Herds

GEORGE T. WOODS, D.V.M., and P. D. BEAMER, D.V.M., M.S., Ph.D.

*Urbana, Illinois*

GUT EDEMA, edema of the bowel, or edema of swine was first described by Shanks[1] in Ireland in 1938. Lamont[2] also referred to the disease the same year at the Glasgow Veterinary Conference. Since that time, it has become an important disease of young swine in the British Isles.

Luke, Gordon,[4] and Timoney[7] have described gut edema as it occurs in the British Isles and reported their findings in detail. Timoney[7] states that the disease has been reported in Ireland, Great Britain, Holland, Norway, Canada, South Africa, and in Indiana (U.S.A.). Timoney concluded that "the disease has not been proved to be contagious, the feeding and inoculation of tissues and body fluids by different routes failed to reproduce the disease but the disease has been reproduced experimentally by the intravenous inoculation of the supernatant fluid from centrifuged intestinal contents from affected carcasses with or without previous extraction with saline, and the evidence obtained strongly supports the suggestion that the disease is a specific toxemia either originating in the bowel or due to the ingestion of a preformed toxin contaminating the food."

Pinkerton[6] reviewed the paper of Luke and Gordon and reported his observations on the disease in Iowa. He states that the appearance of the disease in swine recently vaccinated for hog cholera may be only coincidental, since he has also observed the disease in unvaccinated herds.

In June, 1950, Tabola[9] of Minnesota reported the disease in more than 60 herds. The cases occurred both in herds vaccinated and unvaccinated for hog cholera.

### SYMPTOMS

According to Shanks' description, the disease occurs more commonly in pigs 10 to 14 weeks old, but pigs of all ages up to about 16 weeks may be affected. Some pigs may be found dead without apparent symptoms. Affected pigs show varying excitability followed by incoördination and paralysis. These symptoms develop in a relatively short time. The paralysis may begin either in the forelegs or in the hind legs and progress to other parts of the body. Death frequently occurs in four to five hours from the onset of symptoms. Both sexes are affected. Shanks states that the history of affected pigs usually includes a change in environment or management some days preceding onset of symptoms. A change of feeding often appears to precipitate the disease. In some outbreaks, more than 90 per cent of affected pigs die. Death may occur in a few hours, but some may linger for two or three days.

Edema of the eyelids and face is often an early symptom. The body temperature is variable but is usually within the normal range. Usually, the most thrifty pigs in the herd are affected. The most striking postmortem lesion is edema of the stomach wall. This edema usually occurs along the greater curvature. The stomach wall may be 3 cm. to 4 cm. thick. There may be no edema in some animals. Sometimes an excess of peritoneal, pleural, or pericardial fluid is the only significant lesion. Gut edema should not be disregarded if the first pig examined does not show the typical pathological changes.

A limited amount of information has been reported regarding treatment of affected animals. An anonymous report[3] in the *Veterinary Record* suggested the use of Epsom salts given at the rate of 2 oz. per head, fed in a light bran slop with buttermilk. This author stated further that after symptoms develop, death occurs so quickly that treatment appears useless. This treatment did not always prevent new cases, but some affected pigs recovered following prompt purgation. Anthisan appeared to be beneficial also if given early.

Noble and Frame[4] report treating 80 affected pigs with 2.5 cc. phenergan and 100,000 units of penicillin sodium subcutaneously daily for three days. Twenty of these pigs died. Neither phenergan nor penicillin used alone was successful.

Ray[8] suggested that methylene blue may be helpful in treating affected animals.

From the Department of Veterinary Pathology and Hygiene, College of Veterinary Medicine and Agricultural Experiment Station, University of Illinois, Urbana.

## HERDS AFFECTED IN ILLINOIS

This report is to record the occurrence of a similar or identical disease in three herds of Illinois swine.

*Herd 1*—On Nov. 8, 1950, 80 head of apparently healthy Spotted Poland China shoats were vaccinated for hog cholera with serum and virus. On the fifth day after vaccination, some of the pigs developed edema of the eyelids, incoördination and convulsions, followed by death. The ration consisted of shelled corn and a commercial protein supplement in self-feeders. The pigs were on a blue grass pasture that had been frosted. Two days after the first symptoms appeared, the animals were moved to a corn stalk field. Corn left by the picker, water, and comfortable sleeping quarters were provided. All animals were then given a second dose of hog cholera serum.

In the next two weeks, 34 pigs developed similar symptoms and 32 died. Postmortem examination of 11 affected animals revealed severe edema of the eyelids and adjacent tissues, and congestion of the conjunctivae. The stomachs showed edema between the muscular coat and mucous membrane along the greater curvature (fig. 1). This edema of the stomach wall varied from a slight thickening up to 3 cm. There were patchy areas of moderate to severe inflammatory reaction of the mucous membrane throughout the digestive tract, especially in the gastric and duodenal areas. The temperatures of affected animals were within the normal range. Bacteriological examination failed to reveal pathogenic organisms.

*Herd 2*—On May 11, 1951, 92 apparently healthy Spotted Poland China shoats were vaccinated with hog cholera antiserum and virus. The animals were being pastured on lush alfalfa and were being fed a mixture of ground corn, ground oats, and a protein supplement. In addition, 8 qt. of buttermilk was fed once a day.

On May 16, several animals developed edema of the face and eyelids and incoördination.

During the next three days, 11 animals died. Two typically affected live animals were presented to the laboratory for examination. The findings were similar to those previously described.

On May 19, 9 affected animals were isolated. Eight were given 2 oz. of Epsom salts *per os*, 1½ cc. of an antihistamine solution containing 48 mg. thenylpyramine hydrochloride ( methapyrilene hydrochloride) subcutaneously, and a detoxifying tablet containing sodium thiosulfate (15 gr.), dextrose (15 gr.), sodium nitrite (5 gr.), methylene blue (1 gr.), and extract of mistletoe *per os*. The dose of antihistamine was repeated twice at eight-hour intervals. One pig that received only 1½ cc. of the previously mentioned antihistamine solution died, but the remaining 8 animals recovered.

Fig. 1 — Gut edema of the stomach wall.

On May 20, 9 more typical cases developed. They were segregated and treated in the same manner as the above mentioned 8 animals. None of the 9 died. The remainder of the herd was then treated individually with 2 oz. of Glaubers' salts *per os* and each received the above mentioned detoxifying tablet, but were not treated with the antihistamine solution. All animals were fed only a buttermilk-bran slop during the observation. No new cases developed after May 20. Twelve animals of this herd of 92 died and 2 typically affected animals were killed.

*Herd 3*—On May 7, 1951, 200 apparently healthy shoats, 8 to 12 weeks old, were vaccinated with hog cholera antiserum and virus. The animals were being pastured on an alfalfa-clover pasture and were being self-fed a ration of shelled corn and protein supplement. From May 21 to 22, 5 animals showed symptoms of staggering and dullness and died in twelve hours. On May 23, 2 typically affected pigs were presented to the laboratory for examination. The findings were similar to those described in herd 1. The entire herd was

then taken off pasture and placed in drylot. Eleven pounds of Epsom salts and 200 of the previously mentioned detoxifying tablets were dissolved in the drinking water for the herd. Two animals that developed symptoms of dullness and staggering were individually treated *per os* with a detoxifying tablet. Both animals survived. A buttermilk-bran slop was then fed throughout the period of observation. No new cases developed.

Five animals of this herd of 200 died and 2 were killed.

SUMMARY

Three cases of gut edema in Illinois swine herds are described. Early treatment of affected animals was apparently of value.

**References**

[1]Shanks, P. G.: An Unusual Condition Affecting the Digestive Organs of the Pig. Vet. Rec., *50*, (1938):356-358.

[2]Lamont, H. G.: An Unusual Condition Affecting the Digestive Organs of Pigs. Vet. Rec., *50*, (1938):1387-1388.

[3]Anonymous: Recent Epidemic in Pigs in Ireland. Vet. Rec., *61*, (1949):286-287.

[4]Noble, W. A., and Frame, J.: The Treatment of Bowel Oedema in Pigs. Vet. Rec., *62*, (1950):544-545.

[5]Ray, J. D.: Personal communication, 1951.

[6]Luke, D., and Gordon, W.: Observations on Some Pig Diseases. Vet. Rec., *62*, (1950):179-181.

[7]Timoney, J. F.: Oedema Disease of Swine. Vet. Rec., *62*, (1950):748-755.

[8]Pinkerton, H. E.: "Gut Edema" in Swine. Fort Dodge Bio-Chemic Rev., *21*, (1950):3-4.

[9]Tabola, R. J.: Swine Diseases in 1950. Iowa Vet., *22*, (1951):7.

## Q Fever in Central Italy

G. CAPORALE, D.V.M., and A. MANTOVANI, D.V.M.

*Teramo, Italy*

Q fever in man was not reported in Italy prior to 1944, when there were reports of a series of cases among the civil population and Allied Forces, particularly in southern and central Italy and in Sicily.

The importance of animals in spreading the infection in human beings was signalized for the first time in Italy by A. Mirri, G. Caporale and B. Baldelli of the Institutes for Veterinary Researches of Sicily, Teramo, and Perugia.

The infection is particularly important in Sicily, where A. Mirri (Istituto Zooprofilattico of Palermo) has ascertained that the infection is seriously diffused among the animals in which it is possible to apply the allergic diagnostic test.

The Experiment Station for Infectious Animal Diseases in Teramo made studies in animals associated with an important outbreak of the disease in human beings. The findings included in the following:

*a*) Some cattle and sheep carried and spread *Coxiella burnetii*. The agent was isolated from the milk of 2 cows and of 2 sheep, both by the inoculation of guinea pigs and by cultivation in chicken embryos.

*b*) The infection was sufficiently spread among the animals so that the complement-fixation test was positive for many of them.

*c*) Clinical evidences of bronchopneumonia, articular enlargements, loss of weight, etc., have been noted among infected cattle and sheep.

*d*) The interdependent connection between the human infection and the presence of *C. burnetii* in animals was made evident by the presence of the organism in a cow that had recently given birth to a calf: the milk had been drunk in its original state or made into fresh cheese (consumed on the same farm) which surely contained virulent Coxiella organisms, as the curd had only been warmed to a temperature of 37 to 40 C. for ten to fifteen minutes.

The research of A. Mantovani, of the same Institute, brought into evidence the importance of this infection among goats and sheep in central Italy. He also demonstrated that, to have reliable results in the complement-fixation test, it is necessary to delay the reading of the reaction about one hour after the development of hemolysis in control tubes.

B. Baldelli of the Istituto Zooprofilattico of Perugia, demonstrated the usual connection between infected sheep and human infections.

In seven centers of infection studied in central Italy, the occurrence of the disease

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This is an abstract of a paper entitled "The Importance of Animals for the Epidemiology of Q Fever in Central Italy (Epizoölogic and Diagnostic Aspects)" by G. Caporale and A. Mantovni, Teramo, Italy, which was submitted for publication in the JOURNAL.

Dr. Caporale is director of the Experimental Station for Infectious Animal Diseases, Teramo, Italy; privat-docent for infectious diseases at the veterinary faculty, Perugia. Dr. Mantovani is assistant chief, Experimental Station for Infectious Animal Diseases at Teramo, Italy, and is now studying at the University of Minnesota School of Veterinary Medicine on a Fulbright scholarship.

in human beings was always associated with the parturition or abortion of infected animals being attended by these persons. The existence of the infection in these parturient animals has been variously ascertained with the positive reaction of the complement-fixation test both in the blood of the mother and in the blood of the calf or lamb, with the demonstration of *C. burnetii* in the milk and, when we were able to obtain specimens on animals in the puerperal state before a complete uterine involution, we could isolate *C. burnetii* even from the cervical-uterine secretion. The average period that elapsed between the parturition of infected animals and the manifestation of Q fever in man was eight to fifteen days. The evidence indicated that infected placenta and uterine discharge are potent sources of infection for man.

Studies now in progress in the Istituto Zooprofilattico of Teramo strongly suggest that, at least in central Italy, a reservoir of virus is to be found in the dog, which transmits the infection to other animal species (cattle and sheep) by the tick vector, *Rhipicephalus sanguineus*.

## The Public Health Veterinarian in Relation to Milk Production

Though only 63 cases of brucellosis in man were reported in Ontario in 1949, the actual number of acute cases, using accepted figures, would be ten times that number. The mild cases of transitory infection and cases of chronic disease in which the general health is impaired by a localized infection of many years standing may swell the actual incidence a thousand times.

The prevalence of brucellosis in man depends on its prevalence in animals; its prevention in man depends on the eradication of the disease among susceptible animals. Though pasteurization of milk is an important preventive measure, it must be emphasized that 120,000 milk producers and their families in Ontario receive little if any protection by this process. Infections of nonimmune persons must be expected to continue as long as infected food is ingested or there is contact with infected cattle, goats, swine, sheep, or horses.—*Canad. J. Comp. Med. and Vet. Sci., Aug., 1951: 182.*

## Technique for Diagnosing Ringworm Infections and Moniliasis

A method is described of staining fungi in skin scrapings with basic fuchsin (*J. Am. M. A.*, Aug. 25, 1951:1563-1565). Material obtained by scraping a suspected lesion is placed on a slide that has been prepared beforehand by smearing a drop of Mayer's glycerin-albumin over it. The scrapings are spread over the slide and allowed to dry. Then following stain procedure is employed, using coplin staining jars.

1) Immerse slide for one minute in 95 per cent alcohol, then two minutes in a 5 per cent aqueous solution of periodic acid. (Periodic acid may be obtained from the G. Fredick Smith Chemical Co., Columbus, Ohio.)
2) Transfer to the following solution for two minutes:

| | |
|---|---|
| Basic fuchsin | 0.1 Gm. |
| 95% ethyl alcohol | 5.0 ml. |
| Water | 95.0 ml. |

(Dissolve the basic fuchsin in the alcohol, then add the water.)
3) Rinse briefly in tap water.
4) Immerse in following solution for 10 minutes:

| | |
|---|---|
| Zinc hydrosulfite | 1.0 Gm. |
| Tartaric acid | 0.5 Gm. |
| Tap water | 100.0 ml. |

(The zinc hydrosulfite may be obtained from the Virginia Smelting Co., West Norfolk, Va.)
5) Rinse briefly in water.
6) Dehydrate, using 95 per cent alcohol, absolute alcohol, xylene, and final xylene, for one minute in each. Mount in balsam. These preparations are permanent and may be filed. If preparation is to be examined immediately and discarded, the specimen may be mounted in glycerin instead of going through with the dehydrating, clearing process.

The fungi are stained red and easy to find and identify. This method has been in routine use in the dermatology clinic of the Hospital of the University of Pennsylvania for the last six months. The authors feel that the time and effort required to stain skin-scraping preparations is more than offset by the higher percentage of positive diagnoses and the brief time required to locate fungi in the stained preparations.—*R. D. Turk, D.V.M., Head, Department of Veterinary Parasitology, Texas A. and M. College, College Station, Texas.*

Vitamin A deficiency is an important factor in the formation of cystic calculi.

# An Approach to the Pathogenesis of Fern Poisoning in the Bovine Species

JOHN W. OSEBOLD, D.V.M., M.S.

*Davis, California*

THE SYMPTOMS and lesions of bracken fern poisoning (*Pteris aquilina*) in cattle have been frequently described in the literature.[1,7] Following the prolonged ingestion of the plant, symptoms may develop consisting of epistaxis, lacrimation, slight dyspnea, blood clots in the feces, and temperature readings as high as 107 to 108 F. Acute cases terminate fatally in two to three days, while subacute cases often linger from four to ten days, with some recoveries. Autopsy of fatal cases reveals what is essentially a hemorrhagic diathesis with focal necrosis in some instances. Hemorrhages, varying in size from petechiae to large suffusions, are found in nearly all organs of the body. Focal necrosis often occurs in the liver and lungs, and on the skin and mucous membranes.

A lead to the pathogenesis of the disease may be found in hematological studies. Naftalin and Cushnie[7] reported a severe reduction in thrombocytes and leukocytes in 3 heifers dying of experimental bracken fern poisoning. In June, 1945, the author made a series of blood counts in a natural outbreak of the disease. There was a consistent tendency for the development of a leukopenia which was more specifically a granulocytopenia. This was apparently followed by an erythropenia. Some of the significant counts are recorded in table 1.

TABLE 1—Bovine Blood Counts from a Natural Outbreak of Bracken Fern Poisoning

| Anim. | Temp. | r.b.c** | w.b.c.** | Granulocytes*** Neutro. | Eosino. | Baso. | Mono. | Lympho. | Outcome |
|---|---|---|---|---|---|---|---|---|---|
| Norm. cow* | | 7,120,000 | 9,347 | 27 | 8.4 | 0.7 | 7.8 | 56.1 | ... |
| 1 | 106.4 | 4,980,000 | 3,800 | ... | ... | ... | ... | ... | lived |
| 2 | 106.1 | 3,540,000 | 1,450 | ... | ... | ... | ... | ... | died |
| 3 | 106.2 | | 2,700 | No granulocytes seen on slide — not counted | | | | | died |
| 4 | 106.1 | | 4,950 | 7 | 0 | 1 | 2 | 90 | died |
| 5 | 104.4 | | 3,600 | 2 | 2 | 0 | 3 | 93 | lived |
| 6 | 104.1 | | 6,300 | 7 | 0 | 0 | 0 | 93 | died |

*Braun.[9] **Per cubic millimeter. ***Per cent.

Loss of the members of the granulocyte series in the peripheral blood suggests bone marrow involvement. The hemorrhagic state would occur as a thrombocytopenic purpura following extreme thrombocyte reduction. The thrombocytes have their origin in the megakaryocytes of the bone marrow. Depressed erythropoiesis probably occurs also, but its effect is seen last in the peripheral blood because of the longer life of the mature erythrocyte. This presumed hypocellularity of the bone marrow in the bovine animal has its counterpart in man, in which case it is referred to as aplastic anemia or panmyelophthisis.[10] The symptoms in man are a severe hemorrhagic state, local necrotic lesions, red cell anemia, fever, and high mortality. Red cell anemia occurs last in man, following the granulocytopenia and thrombocytopenia. Cattle suffering from fern poisoning present a very similar picture. It may be theorized that the necrotic lesions sometimes seen in the animals may result from the invasion of surface flora made possible by the loss of phagocytic cells. Several workers have reported finding various bacteria in the organs of stricken animals.[1,3,4,8,11,12] The presence of the bacteria could be explained on the above premise. The high temperature might also be related to the loss of granulocytes and the entrance of bacteria.

Whole blood transfusions seem to constitute a rational therapeutic measure. The transfusions serve to replace, for a brief time, the diminished numbers of platelets, leukocytes, and erythrocytes. The recovery of animal No. 1 in table 1 might be explained on that basis since it had received whole blood on three occasions. Therapy consists in placing the animals on a nutritious ration free of bracken fern. This may be coupled with the administration of whole blood to protect the animal from the effects of deficiencies in important blood elements until the myelopoietic tissues have resumed their normal function. The progress of the recovery may be followed in blood counts. Other symptomatic and supportive

From the School of Veterinary Medicine, University of California, Davis.

treatment, such as antibiotic agents, should be given at the discretion of the clinician.

Many cases of aplastic anemia in man are classified as idiopathic. However, a certain number of chemical agents have been incriminated as being capable of causing this peculiar blood dyscrasia. Cyclic compounds such as benzene, dinitrophenol, and trinitrotoluene are involved.[10] It was a field observation that all barns where ferny hay was being fed had a strong toluene- or benzene-like odor. This might suggest the presence of a toxic cyclic compound in the fern. Another possible explanation for the activity of bracken fern on bone marrow tissues may be found in the work of Gyorgy[14] who observed this same syndrome of bone marrow aplasia and hemorrhagic diathesis in rats fed a ration deficient in pantothenic acid.

The antithiamine activity of bracken fern was first demonstrated by Weswig, Freed, and Haag[15] in rats. This knowledge apparently explains the condition known as "fern staggers" in horses,[7,16] but its correlation to the field problem in the bovine species has yet to be shown.[2,17,18]

## SUMMARY

The clinical picture and hematological changes of bracken fern poisoning in the bovine animal suggest aplastic anemia. Possible explanations for the occurrence of this syndrome following prolonged ingestion of fern are presented. Efforts by others to demonstrate alkaloids, phytotoxins, saponins, or glucosides have been unsuccessful.[6]

### References

[1]Bosshart, J. K., and Hagan, W. A.: A Fatal Unidentified Cattle Disease in New York State. Cornell Vet., *10*, (1920):102-113.

[2]Carpenter, K. J., Phillipson, A. T., and Thomson, W.: Experiments with Dried Bracken (*Pteris Aquilina*). Brit. Vet. J., *106*, (1950):292-308.

[3]Gleeson, L. N.: Suspected Bracken Poisoning. Vet. Rec., *56*, (1944):374.

[4]Hagan, W. A.: Bracken Poisoning of Cattle. Cornell Vet., *15*, (1925):326-332.

[5]Pritchard, W. R.: Bracken Poisoning. Vet. Sci. News, Univ. of Wisconsin, *2*, (1948):4-6.

[6]Shearer, G. D.: Some Observations on the Poisonous Properties of Bracken (*Pteris Aquilina*). J. Comp. Path. and Therap., *55*, (1945):301-307.

[7]Stockman, S.: Bracken Poisoning in Cattle in Great Britain. J. Comp. Path. and Therap., *35*, (1922):273-275.

[8]Naftalin, J. M., and Cushnie, G. H.: Pathology of Bracken Poisoning. Vet. Rec., *63*, (1951):332.

[9]Braun, W.: Average Levels of Various Constituents, Physical Properties, and Formed Elements of the Blood of Cows on Pasture. Am. J. Vet. Res., *7*, (1946):450-454.

[10]Sturgis, C. C.: Hematology. Charles C. Thomas, Springfield, Ill., 1948.

[11]Fletcher, J. M.: Bracken Poisoning in Cattle. Vet. Rec., *56*, (1944):478.

[12]Langley, H. R.: Bracken Poisoning in Cattle. Vet. Rec., *56*, (1944):518.

[13]Custer, R. P.: An Atlas of the Blood and Bone Marrow. W. B. Saunders Company, Philadelphia and London, (1949):184.

[14]György, P.: Hemorrhagic Manifestations Observed in Experimental Deficiency of Pantothenic Acid, Choline, and Cystine. Ann. N. Y. Acad. Sci., *49*, (1948):525-533.

[15]Weswig, P. H., Freed, A. M., and Haag, J. R.: Antithiamine Activity of Plant Materials. J. Biol. Chem., *165*, (1946):737.

[16]Roberts, H. E., Evans, E. T. R., and Evans, C. W.: The Production of "Bracken Staggers" in the Horse, and its Treatment by Vitamin $B_1$ Therapy. Vet. Rec., *61*, (1949):549-550.

[17]Evans, W. C., and Evans, E. T. R.: Biochemistry of Pasture Plants; No. 3, Effects of Inclusion of Bracken in Diets of Rats—Problem of Bracken Poisoning. Brit. Vet. J., *105*, (1949):175-186.

[18]Georgia Coastal Plain Experiment Station: Bracken Fern Poisoning. Georgia Vet., *2*, (1950):8-10. (Abstr. in J.A.V.M.A., *118*, (1951):163.)

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*Enterohepatitis (Blackhead) in Turkeys.*—It was demonstrated experimentally that 50 healthy 6-week-old turkeys were afforded a high degree of protection against blackhead by 2-amino-5-nitrothiazole given in the feed daily at 0.05 per cent concentration. This experiment confirmed earlier work on the high prophylactic value of the drug. Two per cent of the birds thus treated died of blackhead, compared to a loss of 72 per cent in an untreated group of birds of equal numbers. Both groups were exposed to similar infective conditions.

Under the conditions of this experiment, 2-amino-5-nitrothiazole, in 0.05 per cent concentration, exhibited no marked power to cure acute clinical enterohepatitis.—*Canad. J. Comp. Med. and Vet. Sci., June, 1951: 144-145.*

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Inhalation of dried litter from guinea pig cages may have accounted for an epidemic of Q fever in the staff at the National Institutes of Health.—*Am. J. Public Health, July, 1951.*

# Hypertrophic Pulmonary Osteoarthropathy in Association with Pulmonary Neoplasm in Dogs

CARL F. SCHLOTTHAUER, D.V.M., and
J. A. S. MILLAR, V.M.D.

*Rochester, Minnesota, and Deal, New Jersey*

The occurrence of hypertrophic pulmonary osteoarthropathy among lower animals was reviewed recently by Poley and Taylor[1] and by White.[2] They found reports of its occurrence in dogs, sheep, and lions. However, it is an uncommon disease of these species. Among the cases reported in the literature, osteoarthropathy in most instances occurred in association with pulmonary tuberculosis. Poley and Taylor observed its occurrence in association with a bronchiogenic giant cell tumor in the left lung of a dog, and in a case reported by White, it was associated with an adenocarcinoma of the liver which had metastasized to the hepatic lymph nodes. In the latter case, the lungs were normal except for a few areas of collapse. Because hypertrophic pulmonary osteoarthropathy is uncommon in animals and has in only two instances been observed to occur in association with pulmonary neoplasms, the following cases are reported.

Fig. 1—Hypertrophic changes are evident in the bones of the forelegs.

Dr. Schlotthauer is from the Division of Experimental Medicine, Mayo Foundation, University of Minnesota, Rochester; and Dr. Millar is a general practitioner in Deal, N. J.

## REPORT OF CASES

*Case 1.*—Beginning enlargement of the distal third of all four legs was observed in a German Shepherd female, 8 years of age, over a period of four to five months. When the enlargement had been present about two months, a roentgenogram revealed it to be due to hypertrophic changes in the bones of the legs (fig. 1). A roentgenogram of the thorax taken at this time revealed evidence of scattered or disseminated lesions. This tended to confirm the diagnosis of hypertrophic pulmonary osteoarthropathy but the animal was not killed until almost three months later. The enlargement of the legs at this time was advanced.

Necropsy revealed miliary tumor nodules scattered throughout both lungs. These nodules varied in size and some were as large as 0.5 cm. in diameter. There were a few papillomas in the gall bladder. Both ovaries were enlarged and cystic, and a smooth, egg-shaped tumor was present in the uterus. This tumor was solid in character and was 5 cm. by 7 cm. in diameter. All other organs appeared normal, grossly.

Microscopic examination of the pulmonary lesions showed the disease to be primary alveolar adenocarcinoma, grade 1. The tumor in the uterus was a leiomyoma.

*Case 2.*—Enlargement of the lower portion of all four legs of a male hound dog approximately 10 years of age was observed to occur over a period of about four weeks. A roentgenogram of the legs revealed the enlargement to be due to hypertrophic changes in the bones. These changes were similar to those seen in case 1. A roentgenogram of the thorax revealed the presence of a calcified tumor in its posterior portion. The tumor appeared to be about the size and shape of a lemon.

Necropsy revealed the tumor in the lung to be osteofibrosarcoma. It appeared to be primary in the lung.

### References

[1]Poley, P. P., and Taylor, J. S.: Hypertrophic Pulmonary Osteoarthropathy Associated with a Bronchiogenic Giant Cell Tumor in the Left Lung of a Dog. J.A.V.M.A., *100*, (1942):346-352.

[2]White, E. G.: Osteoarthropathy in Dogs. J.A.V.M.A., *101*, (1942):202-203.

# Slobbers in the Rabbit

S. POLLOCK, B.Sc., D.V.M.

*South Orange, New Jersey*

SLOBBERS in the rabbit, variously termed drooling, ptyalism, and indigestion by the rabbit breeders, is a condition characterized in its onset by a gradual loss of appetite, followed by a progressive salivation sufficient to wet the chin, chest, and forelegs. Eventually, the animal refuses food, rapidly becomes dehydrated, cachectic, and dies of starvation.

Fig. 1—Dissected head, showing tongue constricted by lower molars.

Meek[1] considers the condition as an "acute indigestion due to faulty diet, sudden changes in food, lack of sunlight, or cold, damp hutches." Numerous home remedies, varying from a few plantain leaves to syrup of buckthorn, are recommended.

Greenlee's[2] paper on South American chinchillas describes slobbers as "an inflammatory condition of the mouth resulting when the teeth do not meet evenly in the process of mastication. He states that occasionally the teeth may be clipped or filed down to give temporary relief. Also, cases are sometimes found in which the bony framework of the mouth gives way, to let the teeth vary from their normal position and cause slobbers." He states that this condition can seldom be helped.

The etiology of slobbers, as based on x-rays, autopsy studies, plus definitive dentistry herein described will prove that this condition is unequivocally due to faulty alignment of teeth, particularly the lower premolars and molars, which grow medially to impinge on the tongue, thereby provoking the symptomatology described.

A brief resumé of the normal dentition will clarify the picture. The dental formula[3]

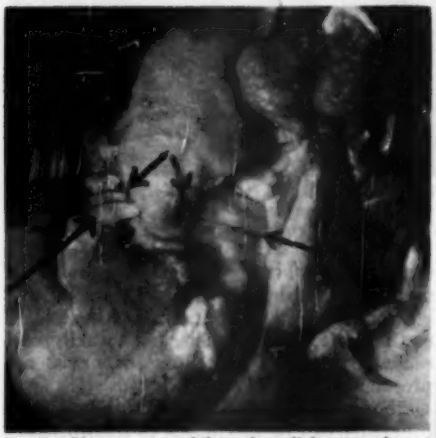

Fig. 2—Close-up view, bilateral medial encroachment of molars upon middle third of tongue.

of the rabbit is: I 2/1; C 0/0; PM 3/2; M 3/3. It will also be observed in this animal that the absence of the intermediate teeth allows the lips to be approximated behind the incisors, and since in this region the lips are also provided with hairs on their internal surfaces, the main portion of the oral cavity is separated almost completely from a small space enclosing the incisor teeth.

It is interesting to note that the upper incisors are so spaced, one behind the other, as to form a V-shaped depression so that the chisel edge of the lower incisors can strike up into that space in the gnaw-

This study was accomplished through a grant by Mrs. C. B. Ward of the Scotsward Farms, Florham Park, N. J.

Dr. Pollock is a small animal practitioner in South Orange, N. J.

ing of food, which is then passed to the back teeth for further mastication.

Since the teeth continue to grow in the rabbit, it is only by the constant grinding of opposing teeth that a state of true dental approximation is reached. Thus, if one or more teeth are broken, the opposite or antagonistic tooth will continue to grow unrestricted, thereby provoking a malalignment of the dental arcade. This condition is designated as "buckteeth," when applied to the incisors and can be temporarily corrected by cutting and filing to normal approximation.

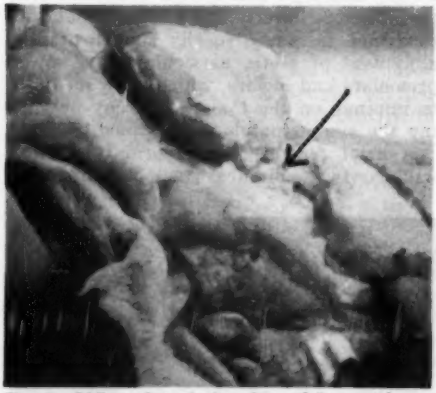

Fig. 3—Oblique lateral view, lower left second premolar and first molar cutting into tongue at middle third.

The dearth of information in available literature can be attributed to the difficulty (1) in examining the molar teeth and (2) in correcting the condition.

Our initial case of slobbers was identified on autopsy as depicted in figures 1, 2, and 3. Here the tongue shows the ulceration formed by the constant irritation of the sharply pointed, medially malpositioned teeth. It is not hard to appreciate why the patient refuses food, salivates, paws its mouth, and suffers intensely from malnutrition.

Roentgenographic studies delineate the normal mandible (fig. 4, right) in sharp contrast to the medial extension of the molars in the case of "slobbers" (fig. 4, left).

The apparently healthy rabbit that suddenly exhibits a lack of appetite should be suspected of having dental trouble. This symptom warrants a thorough examination of the mouth for ulceration of the tongue traumatized by malpositioned teeth.

The treatment is readily achieved under suitable anesthesia, preferably ether. Under good exposure, the faulty tooth is leveled with an adequate bone cutter and filed smooth with a dental abrasive.

Fig. 4 (Left)—Anterior-posterior view of slobbers in above described case; (right) anterior-posterior view of normal rabbit.

Frequently, an upper molar may grow unarrested downward and laterally to impinge on the cheek, thereby causing an irritation of the lower jaw. This results in an abscess which responds to suitable drainage, antibiotics, plus the indicated dentistry.

## CONCLUSIONS

1) A description of slobbers in the rabbit is submitted.

2) The etiology as determined by x-ray and autopsy findings is described.

3) Adequate dental treatment corrects the problem of slobbers, as well as lower jaw abscesses.

### References

[1]Meek, M. W.: Diseases and Parasites of Rabbits and Their Control. Reliable Fur Industries, Montebello, Calif., (1943): 131.

[2]Greenlee, H. H.: The Veterinarian in Chinchilla Practice. North Am. Vet., *32*, (1951): 254-257.

[3]Bensley, B. A.: Practical Anatomy of the Rabbit. 7th ed. Blakiston Co., Philadelphia, (1945): 59.

# Staphylococcic Dermatitis of Sheep

W. T. HARDY, D.V.M., and D. A. PRICE, D.V.M.
*Sonora, Texas*

Diseases of sheep in the United States have generally received less attention and have been the subject of fewer reports than have other classes of livestock. This may be partially explained by the heretofore low value of individual animals and the failure of research workers to be attracted to those sections of the country where large numbers of sheep are available for study. Furthermore, the economic worth of the individual animal also accounts for the fact that workers have often failed in the past to report on conditions involving only one or a few sheep in a flock of several thousand. With the exception of ectoparasitic infection, this is especially true of skin diseases. However, the present-day economy is exerting a profound effect on the sheep industry, and this will in turn be reflected in a revised attitude of ranchers and veterinarians toward afflictions involving a small percentage of the flock.

The authors do not presume the reported condition to be rare but, on the contrary, suspect that it may have occurred many times in the large sheep-raising areas. However, a survey of the literature available to us fails to reveal an appropriate report.

Staphylococcic dermatitis in range sheep is described. Considering the density of the fleece of most breeds of sheep, it seems improbable that the infection could spread to more than a few animals in a flock. Head abrasions resulting from ram fights would appear to offer the greatest opportunity for natural inoculation.

*Case Report.*—A producer of cross-bred lambs presented 2 mature, registered Suffolk rams which were afflicted with well-advanced skin lesions at the poll, withers, back, and rump. The ears were also affected, but were merely dotted with small lesions. The fleeces were denuded in areas as large as 15 cm. in diameter. Even in some areas where the fleece appeared from a distance to be intact, the skin surface was covered by a hardened layer of serum; moreover, in these areas the fleece and crust could easily be pulled free, leaving a reddened, dry, rough dermis that was the pitted mirror image of the removed crust. The skin surface at the denuded areas contained numerous wafer-thin scales, about 6 mm. in diameter. Both rams evidenced pruritis by rubbing against the sides of the stall and by scratching with the hind feet.

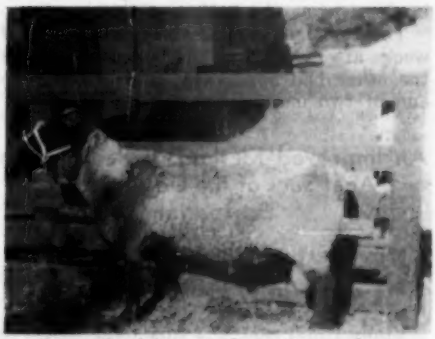

Fig. 1—Staphylococcic dermatitis in a sheep.

The smaller of the 2 animals was somewhat emaciated. Foot lice were present on both rams.

The owner first noticed the broken fleece on the smaller ram almost two months prior to our examination. Two weeks later, the other ram appeared to be affected (*see* fig. 1). No further cases appeared in the breeding flock of 100 Suffolk rams, nor in the 4,500 Rambouillet ewes to which they were bred.

Parasitic infection was ruled out by clinical and microscopic examination, and inoculation of mycological mediums resulted in no growth of pathogenic fungi. Inoculation of blood-agar plates yielded pure cultures of *Staphylococcus albus* (species identification in accord with Bergey's Manual[1]). Because this organism is a common skin contaminant, the isolation procedure was repeated. Sterile swabs were carefully probed into the pits described above, then streaked onto blood-agar plates. Results were consistent. In only a couple plates did other organisms appear. These were *Escherichia coli* and molds.

Two lambs, Corriedale and Rambouillet,

Superintendent (Hardy) and assistant veterinarian (Price) of substation No. 14, Texas Agricultural Experiment Station, Sonora.

Presented before the fourth annual Conference for Veterinarians, June 7-8, 1951, College Station, Texas.
Printed with permission of the administration of the Texas Agricultural Experiment Station, College Station.

[1]Breed, Robert S., Murray, E. G. D., and Hitchens, A. Parker: Bergey's Manual of Determinative Bacteriology. 6th ed. The Williams & Wilkins Company, Baltimore, Md., 1948.

respectively, were inoculated by pin-pricking skin areas which had been swabbed with a suspension of the suspected organism. By the eighth day, there had developed at the inoculation sites typical lesions from which pure cultures of *Staph. albus* were readily obtained. These lesions seemed to have no tendency to spread beyond the general area of inoculation, however, even when the fleeces were kept moist with water for one week. Healing occurred spontaneously in about two and a half months.

The emaciated ram died three and a half weeks after arrival at the laboratory, while the other had apparently recovered at the end of two months.

## An Improved Method of Packing the Anal Sacs of the Dog Prior to Extirpation

J. D. WHEAT, D.V.M., and E. A. RHODE, D.V.M.

*Davis, California*

Many times complete surgical removal of the anal sacs of the dog is difficult because of the inability to produce a satisfactory line of demarcation between the sac and the surrounding perirectal tissue.

Theobold[1] has described a method of packing the anal sacs with cotton warp as an aid in outlining the sac.

Fig. 1—Anal sacs as they appear following removal.

The injection of rapid-drying plaster of Paris makes a most satisfactory means of outlining the anal sac. This technique is carried out as follows: Rapid-drying plaster of Paris, such as that which is incorporated in plaster of Paris bandages, is mixed with water to form a paste of such consistency that it can be injected through an ordinary

Fig. 2 (Above)—Opened anal sacs showing the hardened plaster of Paris; (below) the blunt needle used for injecting the plaster of Paris.

glass syringe and a 15-gauge needle which has been ground down to ¾ in. in length with a rounded end. With the dog under complete anesthesia, the blunt needle is inserted into the duct of the anal sac and the plaster of Paris injected until the sac is distended, as evidenced by the oozing out of plaster of Paris around the needle. This usually requires 3 to 5 cc. of the mixture. It is sometimes necessary to hold the duct closed for a short time with a pair of forceps to prevent escape of the injected material. The syringe should be washed out immediately upon completion of the injection.

The plaster of Paris hardens in five to ten minutes. The distended sac is then grasped between the finger and thumb and an incision made over the sac. Following the initial skin incision, the outline of the sac is readily seen and may be easily dissected out with a pair of scissors.

This method presents the following advantages: No special instruments are required to pack the sac; the process of injection is more rapid and simpler than packing the sac with cotton warp; and in case of accidental cutting of the sac wall during removal, no packing material escapes

From the School of Veterinary Medicine, University of California, Davis.

[1]Theobold, A. R.: Surgery of the Anal Sacs. North Am. Vet., 23, (1942):44-46.

as does the cotton warp, nor does the sac collapse, making it somewhat difficult to complete the removal.

## Patency of the First Pair of Pharyngeal Pouches in a Calf

W. G. VENZKE, D.V.M., Ph.D., and
JAMES D. GROSSMAN, G.Ph., D.V.M.

*Columbus, Ohio*

On May 19, 1951, Dr. G. J. Thompson of Conneaut, Ohio, presented a calf, case No. 1637B, to The Ohio State University veterinary clinic for teaching purposes.

The calf was 7 days old and in good health upon arrival at the clinic. The brief history indicated that it was sired by a Holstein-Friesian bull mated to a Jersey-Guernsey dam. At parturition, the calf was born in a normal posterior presentation assisted by the owner. The ration fed consisted of colostrum and milk from the dam administered via a simplex tube. The milk was permitted to drain slowly over the posterior surface of the tongue as the calf swallowed.

There was no evidence that any type of anomaly had occurred previously in the herd. The sire of the calf had been employed as the herd sire. The dam was 13 years old and previously produced only normal calves.

Fig. 1—The appearance of the cephalic region of the calf upon entrance into the clinic.

The physical examination revealed the following anatomical malformations: (1) cleft palate (fig. 2); (2) no buccal tissue, permitting exposure of the upper cheek teeth (fig. 1); (3) no temporal-mandibular articulation; (4) a 2-in. posterior retraction of the mandible, leaving the incisor teeth of the mandible directly ventral to the first premolar teeth of the maxilla (fig. 4); (5) no formation of closed Eustachian tubes (fig. 2); (6) incomplete encirclement of the external ear around the external auditory meatus (fig 2); (7) no cheiloschisis.

The calf remained bright and active for two days, at which time it was embalmed and prepared for teaching purposes in developmental anatomy.

A gross dissection of the temporal-mandibular articular and auditory regions revealed the following anatomical facts: (1) The external auditory meatus on each side was patent (fig. 3); (2) the inner ear was normally developed; (3) the mandibular coronoid process (fig. 3) was not developed; (4) there was no insertion of the temporalis muscle on the coronoid process; (5) the masseter muscle was partially developed and failed to have an origin of attachment from the zygomatic arch; (6) a true temporal-mandibular articulation (fig. 3) was not evident; (7) the mandibular condyle was imperfectly developed with a semblance of a meniscial cartilage attached over the entire condyle (fig. 3).

Fig. 2—The appearance of the oral and pharyngeal regions. Note cleft palate, Eustachian tubes forming angles of the mouth, and the appearance of the external ear.

The diagnosis, based on the history, physical examination, and gross anatomical dissection, was

From the Departments of Veterinary Medicine and Veterinary Anatomy, The Ohio State University, Columbus.

persistent patency of the first pair of pharyngeal pouches and cleft palate.

It seemed appropriate to the authors to follow the above description with a discussion of the regions involved so that the reader may review and obtain a clear mental picture of how the anomaly occurred.

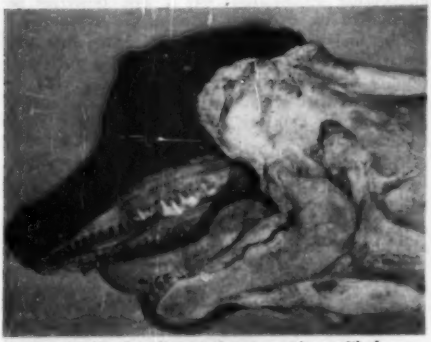

Fig. 3—Note the dissected temporal-mandibular region, absence of a true articular service and coronoid process. The probe is in the external auditory meatus.

The oral cavity and all its specialized structures are normally derived from the stomodeal region of the embryo. The facial area and mandibular complex is formed from processes which arise in proximity to the margins of the stomodaeum. As these abutting structures grow from initial embryonic development, a deepening of the shallow stomodeal depression occurs to form the oral cavity. In order that the extent of this progressive growth be properly visualized, it should be kept in mind that in the adult the point of rupture of the oral plate or stomodeal membrane lies approximately at the level of the tonsilar area.

Development of the facial and nasal region is dependent primarily on the bulging region ventral to the forebrain and the first pair of branchial arches. This region is known as the fronto-nasal process. In this calf, the lips and anterior nares were normal.

The anterior or cephalic portion of the embryonic foregut becomes differentiated as the pharynx. The embryonic pharynx is compressed dorso-ventrally and is rather extensive laterally, consisting of a series of pouchlike diverticula projecting outward on either side between the branchial arches. Branchial arches are barlike ridges separated by branchial grooves and appear on the lateral and somewhat ventral surface of the embryonic head during the first month of development. They are analogous with the gill-arches of some amphibians and fishes. In these species, the arches actually bear gills, but in amniotes or mammalian embryos, the branchial arches do not bear gills.

Five pairs of branchial arches develop and are separated by four pairs of ectodermal branchial grooves. At the level of the branchial grooves, the pharyngeal entoderm pushes aside the mesenchyme (mesoderm) and bulges outward or

—E. B. McCrady, X-ray Technician, The Ohio State University Veterinary Clinic

Fig. 4—A radiograph illustrating the absence of a true temporal-mandibular articulation and retraction of the mandible.

laterally to become pharyngeal pouches. The ectoderm of each branchial groove and the pharyngeal entoderm of each pouch unite to form thin plates which rarely rupture in mammalian embryos, thus completing the gill-slit condition for mammalians. In the event that the thin plates between the branchial arches rupture in mammalians they are short-lived and close rapidly. This break-through to the outside is most commonly observed in the more anterior pharyngeal pouches.

Of major importance in this particular calf is the fate of the first pair of branchial arches and pharyngeal pouches. Normally, the first arch on each side bifurcates into a maxillary and a mandibular process. These are mesoderm derivatives. Thus, the maxillary process differentiates into the upper jawbone, palate, dentine, and cementum of the upper teeth, while the mandibular process gives rise to the lower jawbone, dentine, and cementum of the lower teeth, the spheno-mandibular ligament, and the malleus and incus of the ear. In this calf, the maxillary process from either side did not fuse on the median plane, accounting for the cleft palate. The ear, however, was normal. Other mesodermal derivatives of the first branchial arches are the muscles of mastication, the anterior belly of the digastricus muscle, and the tensor tympani muscle. These muscles are innervated by the fifth cranial nerve. It should be recalled that in this calf the masseter muscle was only partially developed.

The ectodermal covering of the first branchial arch gives rise to the epidermis of the lower por-

tion of the ear, and parotid salivary gland. The ectoderm covering the maxillary process differentiates into the epidermis of the upper lip and cheek and the enamel of the upper teeth. The ectoderm of the mandibular process becomes the epidermis of the lower lip and jaw, the enamel of the lower teeth and the sublingual and submaxillary salivary glands. The epithelial covering of the palate and body of the tongue also are derived from the ectodermal covering of the arch. The cheeks were not developed in this calf.

The entodermal lining of the first branchial arch normally gives rise to the epithelium lining part of the sides and floor of the mouth.

The ectoderm covering the branchial groove between the first and second branchial arch differentiates into the external auditory meatus, the epithelium of the meatus, and the external surface of the tympanic membrane.

The entodermal portion of the first pharyngeal pouch located between the first and second branchial arches gives rise to the tympanic cavity of the middle ear and its epithelial lining, the internal surface of the tympanic membrane, and to the Eustachian tube. The thyroid gland anlagen arises from the floor of the first pharyngeal pouch. It should be recalled that in this calf the Eustachian tubes were open, forming the angles of the mouth (fig. 2).

The second branchial arch (hyoid arch) eventually overlaps the remaining unnamed arches and covers them into a triangular depression known as the cervical sinus. This occurs within the first two months of development. The hyoid arch gives rise to the stapes of the ear, and the small and middle cornu of the hyoid bone.

The obliterated third branchial arch in the cervical sinus differentiates into the body and great cornu of the hyoid bone.

The fourth branchial arch gives rise to the thyroid and cuneiform cartilages of the larynx.

The fifth branchial arch differentiates into the arytenoid and cricoid cartilages of the larynx.

From the above brief discussion, it becomes apparent that the second and remaining three pairs of branchial arches were not involved in the anomaly, since the larynx and tongue were normal.

It may be concluded from a review of the normal developmental anatomy, that this anomaly resulted from a patency of the first pair of pharyngeal pouches and involved some of the ectodermal, mesodermal, and entodermal derivatives of the first pair of branchial arches.

## Hyperkeratosis (X-Disease) in Cattle

Fractions of the processed concentrate previously reported to have produced hyperkeratosis experimentally were fed to calves (*Cornell Vet.*, July, 1951: 237).

It was found that the ether extract of the concentrate and the free fatty acid fraction of the ether extract would produce the disease.

The ether extract residue and the phenolic and neutral steroid fractions of the ether did not produce the disease.

## The Experimental Production of Hyperkeratosis

A ton of a processed concentrate suspected of causing hyperkeratosis was obtained. This feed proved to be an active and rapid cause of hyperkeratosis. Six animals fed a quart or less of this feed daily along with fitting ration and hay developed typical symptoms and lesions. These calves weighed between 200 and 400 lb. Lacrimation, which kept the cheeks continually wet, developed after six to twenty days on this feed. Marked renal tubular dilatation was present in a bull calf which consumed 12 lb. of this concentrate during seventeen days of feeding and died thirty-seven days after the feeding started. A second bull calf consumed about the same amount of this feed over a thirty-day period and was moribund two months from the initial feeding. His horns had developed an indentation at the base. Typical mouth, skin, bile duct, and kidney lesions were present.

Sheep were susceptible to the toxic substance in this concentrate. Two lambs, weighing about 50 lb. each, consumed 54 lb. of this feed from Nov. 7, 1950, to Feb. 6, 1951. The ram was more aggressive than the ewe lamb and undoubtedly ate more than half of the feed. He was sick on February 6 and died February 16. Both body cavities were distended with a transudate. There was gross mottling of the liver due to focal necrosis of liver cells, with dilatation of the sinusoids in the areas where the liver cells had been lost.

Two concentrates having a similar formula but obtained from other sources have proved harmless. A second sample from the same source as the original toxic feed but handled in a different manner proved nontoxic.—*Cornell Vet., April, 1951.*

Ethyl biscoumacetate (tromexan) is a satisfactory anticoagulant for clinical use. —*Proc. Staff Meet. Mayo Clinic, April 25, 1951.*

# NUTRITION

## Trace Elements in the Nutrition of Cattle

Many striking changes in animal nutrition can be attributed to some of the trace minerals. In Florida, the effects of iron, copper, cobalt, manganese, and zinc have been studied.

*Iron.*—A deficiency of iron is difficult to demonstrate under practical conditions of cattle husbandry, even though a requirement for it has been recognized ever since iron has been shown to be a vital part of the hemoglobin molecule.

When cattle are being pastured on light sandy soils and often when they have been subjected to heavy insect or parasitic infectations, the addition of iron as iron citrate, iron sulfate, or as red oxide has served a useful purpose, and the hemoglobin levels as well as the condition of the animals have improved under such treatment.

It has been difficult to establish a level of iron requirement, although satisfactory results have been obtained with levels of 3 to 25 lb. of red oxide of iron per 100 lb. of mineral mixture.

*Manganese.*—Practically all of Florida requires the addition of manganese in order to obtain satisfactory crops or to establish improved pastures.

Manganese is reported to be of value in the prevention and cure of brucellosis. Thus far, in Florida, in herds that have been subjected to high levels of manganese, we have not found any difference in the incidence of brucellosis, it having occurred in herds receiving manganese and those not receiving manganese in about the same percentage.

*Zinc.*—We have been interested in possible zinc toxicity due to feed ingredients from soils given heavy applications of zinc fertilizers. Cattle, at least, appear quite resistant to comparatively high levels of zinc and, further, on levels that are not above 15 parts per million, normal growth and development are shown.

*Cobalt.*—It has often been said that the most important element in any feed is the element that is missing or is present in insufficient quantity to meet the requirements of a given animal. Under conditions which the author belives are widespread throughout the United States, two elements are likely to be present in insufficient quantities to meet the requirements of cattle. They are cobalt and copper.

A deficiency of cobalt comes on gradually and may not give a characteristic syndrome. The most characteristic syndrome is a starvation picture. Cattle suffering from cobalt deficiency have a depressed appetite. Muscular weakness is a common feature but there is not stiffness, such as occurs with phosphorus deficiency or with copper deficiency.

A severe anemia develops, usually late in the deficiency which is not usually seen in uncomplicated starvation. The hair commonly fails to shed. Eventually, the cattle take on an appearance of skin and bone with rough coat and no particular interest in feed. This lack of appetite has become recognized as a characteristic feature of cobalt deficiency and is a basis for some of the most dramatic responses when therapeutic levels of cobalt are administered. The level of 0.07 of a part per million of cobalt in feed has been the dividing point between animals which develop cobalt deficiency and those which are not likely to show any signs of a cobalt insufficiency. No signs of cobalt deficiency have ever developed in feeds which contained a level of 0.1 of a part per million of cobalt in the ration.

A partial deficiency of cobalt, levels of less than 0.06 parts per million, has resulted in lowered production of milk, a poor calf crop, and a somewhat lowered resistance to parasitic infection. The addition of cobalt to an apparently normal herd has resulted in increased production, increased hemoglobin values, and general improvement in over-all performance of the cattle.

Studies seem to indicate that the principle role of cobalt must be within the in-

This is an abstract of a paper, "Trace Elements in the Nutrition of Cattle" by George K. Davis, animal nutritionist, Florida Agricultural Experiment Station, Gainesville, which he presented before the National Mineral Feed Manufacturers' Association, Chicago, Sept. 17, 1951.

testinal tract itself. The fact that cobalt forms a part of the vitamin $B_{12}$ molecule indicates that one of its functions, at least, is as a part of that vitamin. More and more evidence indicates that cobalt serves in many ways to promote the digestion, and therefore feed efficiency, in ruminants.

Cobalt has another function and this is associated with the availability of other trace elements. When cobalt is included in the mineral mixture or given as a drench, the retention of copper in the liver by the animals receiving cobalt is much greater than by animals which are not receiving it. This has occurred in animals which have never shown cobalt deficiency and which appeared to be obtaining adequate amounts of cobalt from their feed.

*Copper.*—The value of copper in the mineral mixtures in the state of Florida has been particularly accentuated by extreme deficiency which occurs in some of our soils.

When cattle are placed on copper-deficient pastures, even with a good store of copper within their bodies, they rapidly lose their copper reserve and although they continue to have a good appetite it soon becomes obvious that with plenty of feed available the animals are losing weight. If molybdenum is present, scours may be severe, and they will develop a faded coat which is a true achromotrichia. They have a tucked-up or pained appearance and are lethargic when driven. Eventually, bone fragility becomes an important part of the syndrome and broken bones, including ribs, legs, and thighs are common.

In the case of young animals, the picture is one of rickets, and beading of the ribs may be observed with enlargement of the ends of the long bones. A failure to grow is common and there is a general disability leading to death unless some supplementation of copper is made. Hemoglobin levels as low as 6 Gm. of hemoglobin per 100 ml. of blood are common. This in itself results in many of the pathological observations which have been made.

A common observation made on these areas where cattle have not received an adequate copper supplement is the high proportion of monstrosities. This interference with reproduction has been serious and affects both male and female. Under severe conditions, we have observed that as many as 10 per cent of all calves born are monstrosities. The principle changes in these calves are enlarged heads with missing bones and abnormal formation of the bones.

In the females, as copper deficiency becomes severe, they fail to come in heat. In males, there appears to be a destruction of germinal tissue which, if allowed to progress to a severe degree, results in sterilization.

Since copper gives a response in yield of the pastures, its application by means of fertilizer is a well-advised and frequent procedure.

Mineral mixtures which contain 1 per cent copper sulfate in the sandy land areas have been adequate and have resulted in satisfactory response in the animals. On the peat areas where molybdenum becomes a factor, doubling or even tripling this level has been beneficial so long as the phosphorus does not become a limiting factor and the animals do not consume abnormal amounts of the mixture.

## It Pays To Feed Trace Minerals to Swine

The Iowa Agricultural Experiment Station has released the following financial advantages from the feeding of trace minerals to swine, based on a herd of 20 sows.

Sows fed trace minerals wean nearly 1 more pig per litter, netting a 39 lb. increase in weaning weight per litter. At the current value of $15 per weaned pig, this adds $300 to the gross value of the litters from 20 sows. The cost of feeding trace minerals to 20 sows is $2.25, a net saving of $297.75.

Feeding trace minerals reduces the feed costs from weaning to 240 lb. by $175.89 for 130 pigs from 20 sows. The hogs reach market weight seven days earlier when fed trace minerals.

Thus, the total net savings by feeding trace minerals in producing one set of litters from a 20-sow herd is $473.64, plus the man power saving resulting from the hogs going to market seven days earlier.—*Iowa Agricultural Experiment Station.*

*Nutrition and Fertility in Cattle.*—There is little conclusive information available on the relationship of nutrition to fertility of cows and heifers; in fact, opinions vary so much that it is difficult to make an assessment.—*Vet. Rec., Sept. 22, 1951.*

## Antibiotics and Vitamin $B_{12}$ for Hogs

Many experiments have been conducted in recent years showing that vitamin $B_{12}$ (formerly known as the APF—animal protein factor) is needed for maximum growth and feed efficiency in hog production (W. M. Beeson, M.S., Ph.D., Purdue University, Lafayette, Ind.).

Vitamin $B_{12}$ is not new to hogs. For years we have been supplementing hog rations with animal proteins which have been supplying varying amounts of $B_{12}$. Probably one of the reasons that much better results have been obtained by feeding protein supplements that contain fish products, milk products, and meat products is because all of these concentrates contain vitamin $B_{12}$ as well as unidentified factors.

Do antibiotics contribute to the strength and livability of newborn pigs? Or, in other words, *should antibiotics be fed to pregnant gilts and sows?* At present the complete answer to this question is not known.

Until we know more about the long-term effect of feeding antibiotics through several life cycles, it would be advisable to feed antibiotics only to the pig after it is born and not to the pregnant gilt or sow.

Is it necessary to feed antibiotics during the entire growing-fattening period or can antibiotics be dropped out of the ration at 100 to 125 lb. in weight?

Results indicate that antibiotics have no carry-over effect and must be kept in swine rations during the entire fattening period for maximum growth response. Feed antibiotics from the time the pig starts eating or from birth to market weight.

How much of an antibiotic should be fed for maximum response? The answer to this question is not clear at present. However, our best knowledge to date indicates that 5 mg. of an antibiotic per pound of total finished feed (10 Gm., approximately 1/3 oz. per ton) will give maximum response in most cases. When hogs are fed free choice on shelled corn and a protein supplement, the antibiotic should be added to the supplement at a rate of 25 to 35 mg. per pound, or 50 to 70 Gm. per ton.

What is the cost of antibiotic and $B_{12}$ supplements? The cost varies, depending on the type used, but in general antibiotics cost about 22 to 25 cents per gram. Assuming that 10 Gm. per ton of finished feed is required, the cost would total $2.20 to $2.50 per ton of finished feed.

The advantages of antibiotic and vitamin $B_{12}$ supplements are:

1) Increases growth rate about 0.4 lb. daily.

2) Hogs reach market weight sooner.

3) Improves feed efficiency about 10 per cent.

4) Tends to make all hogs grow at the same rate.

5) Eliminates most of the "runts" and poor feeders.

6) Increases the bloom and thrift of the pigs.

7) Usually costs less per unit of gain.

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*The Influence of Nutrition on Reproductive Efficiency in Cattle.*—Although clinicians generally agree that nutrition influences reproductive efficiency in cattle, there is little detailed information published to support this view. Hignett and Hignett (*Vet. Rec.*, Sept. 22, 1951) endeavor to establish a relationship between reproductive ability and two of the many nutritional factors which are involved; the intakes of calcium and of phosphorus.

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*A Study of Calf Diseases.*—It is important to ensure that colostrum is given to calves, to remember that there is more danger in overfeeding than underfeeding, and that steps should be taken to promote the rumen function by encouraging the ingestion of suitable food.—*Vet. Rec., Sept. 1, 1951.*

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Treatment of anemia by feeding of liver was first discovered in experiments on the dog.—*H. C. Stephenson, D.V.M., New York.*

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*Nutrition and Reproductive Efficiency in Cattle.*—In a group of 802 cows and heifers, it was demonstrated that when $P_2O_5$ intake was low, a rise in CaO intake impaired breeding efficiency, but when $P_2O_5$ intake was high, a low CaO intake was often associated with low fertility and a high CaO intake with high fertility.—*Vet. Rec., Sept. 22, 1951.*

# EDITORIAL

## Doctor, Meet the Press

The year now ending has witnessed a marked upturn in the number of popular magazine articles and newspaper feature stories about veterinary medicine. Most of them were well written and contained sound information that was helpful both to the public and the profession. Only one or two could be classified as unfavorable or sensational.

Yet, it takes only one unfavorable article to make some veterinarians refuse to be interviewed by any news reporter or magazine writer. Remembering the one bad story much longer than all of the good ones, they believe their statements will be twisted by writers who are out to discredit them. And, above all, they fear they will be criticized by their colleagues, on grounds of professional ethics, if they are quoted or otherwise featured in a lay article. In this group are some of those who complain the loudest about a lack of good publicity.

It is not known exactly how many in the profession have a negative attitude toward press relations, but the number is substantial and the situation needs to be corrected. Veterinary medicine would still be as misunderstood as it was in the "horse doctor" stage, as far as public opinion is concerned, were it not for the fact that the press and radio have, during recent years, regularly reported on the profession's work. They have done so because millions of animal owners want such information.

The AVMA has played a leading part in developing good press relations and is convinced that they must be developed further if the profession is to win its rightful share of public support. This can not be done without the coöperation of all veterinarians.

It thus becomes the responsibility of every member of the profession to know how to meet the press and supply information that is requested. Good judgment coupled with knowledge of the AVMA Code of Ethics should guide the issue of such information. Although the Code does not specifically mention techniques of press relations, it calls for abstinence from self-eulogy and regard for the welfare of the profession at large. In some cases, this may mean remaining anonymous.

For example, in the story, "Pets Get First Crack at New Medicines," published in *Business Week* (August 25, 1951), a Cleveland member, Dr. H. E. Jensen, was the writer's main inspiration, but Dr. Jensen made the unselfish decision to keep his name and the name of his hospital out of the article, in order that all veterinarians would benefit equally from the publicity.

On the other hand, "The Veterinarian," published in *The Farm* (Summer, 1951), was of necessity a personalized story about Dr. S. L. Saylor, of Canal Winchester, Ohio, but it was presented in a manner that symbolized the work of all practitioners. It could not have been written without identification of Dr. Saylor, and Author Grant Cannon took every precaution to keep it in line with professional ethics. It was commendable from every standpoint, although other veterinarians placed in a similar position may not be fortunate enough to draw such a competent and considerate writer.

When in doubt, members approached for interviews should feel free to consult the AVMA office for guidance, or to refer writers directly to the AVMA office. When there is not time for that, here are four points to remember:

1) Know the reputation of the publication the writer represents. If he is a free-lance writer, ask him questions to satisfy yourself that he will write an honest, factual account of the interview.

2) You are one of many veterinarians, and whatever you say will reflect on all of them. The reflection should be creditable and bring the accomplishments of others into full view.

3) Be a conservative spokesman, and be an impersonal spokesman to the fullest extent the proposed story will permit.

4) Do not be afraid to explain your position, and the ethics involved, to the interviewer.

Writers know what they want and have ways of getting information. As a veteri-

narian, you may not know what the public wants to read or exactly how it should be written, but the reporter generally knows. Give him credit for that and help him all you can. In return, he should be willing to adhere to any reasonable request designed to make the story professionally acceptable. However, do not expect him to turn out a perfect product; it is rare when a scientific news story is so accurate that it pleases all of the critics.

With very few exceptions, writers have done the best job they can to give the public unbiased, constructive information about veterinary medicine. We can look for more and even better reports as they learn more about this field—and as veterinarians learn more about working with writers.

## Revised Tuberculosis-Testing Program

For a number of years the U. S. Bureau of Animal Industry and the U. S. Livestock Sanitary Association have recognized the need for increasing the volume of tuberculin-testing of cattle. In many counties, re-accreditations were being accomplished by testing only a very small percentage of the cattle in the area. There have been rather wide differences in the volume of testing in different states.

In some states, veterinary officials have seen evidences that there are currently more tubercular cattle than some might suppose. Such evidences have resulted not only from tuberculin test reports but also from packing house postmortem reports.

The first current formal action resulting from this situation was taken at the 1947 meeting of the U. S. Livestock Sanitary Association. At that meeting, procedures were adopted which provided for testing all cattle in an area at intervals not to exceed six years to qualify for re-accreditation. This obviously would have been a sizeable and relatively costly undertaking. Considerable opposition developed to this proposal, particularly from those states which had a very low percentage of tuberculosis in cattle when the original testing was done.

The uniform methods and rules, used for many years, provided for designating areas as modified accredited tuberculosis-free when the percentage of infection had been reduced to 0.5 per cent. Under the present methods and rules, adopted in 1950, areas are eligible for six-year accreditation but must show not more than 0.2 per cent infection, with all cattle in the area being subjected to test, except in those areas which were found on the original or any subsequent test of all the cattle to have less than 0.2 per cent infection. Such areas may be re-accredited for a period not to exceed six years by testing not less than 10 per cent of the cattle. Other requirements are specified for other types of areas.

Over-all, it is generally agreed that if we are to reach the goal that has been set, it will be necessary to test a much larger percentage of cattle than has been tested for the past few years, or improve the methods of locating infected herds by means in addition to the tuberculin test.

It has been stated that a number of obstacles to completing this project have presented themselves, among them: (1) a shortage of veterinarians; (2) an attitude of complacency on the part of both the veterinarian and the owner, which is no doubt due to the wide publicity given to the accredited status of the entire country attained in 1940; and (3) a tendency to shift interest from tuberculosis to brucellosis control during recent years.

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# CURRENT LITERATURE

## ABSTRACTS

### Hepatic Function in Man Before and After Partial Resection of Liver

It is well known that "liver function tests" may be negative in the presence of extensive liver disease and that sometimes one of these tests may be positive while others are negative.

Liver function tests were performed before and after resection of 16 per cent of the liver in a case of primary liver cell carcinoma occurring in a noncirrhotic organ.

The serum flocculation tests and the urinary excretion of urobilin (ogen) alone showed changes believed to be attributable to partial resection of the liver.

The serum proteins and the pattern of amino acids in the blood and urine showed changes believed to be nonspecific in relation to the operation.

The following tests failed to register the surgical intervention: plasma prothrombin concentration, blood urea, serum bilirubin, hippuric acid synthesis, bromsulphalein clearance, serum alkaline phosphatase.—[*F. V. Flynn and J. M. Walshe: A Study of Hepatic Function in Man Before and After Partial Resection of Liver. Brit. Med. J., (June 30, 1951): 1484-1486.*]

### The Prophylaxis of Tetanus with Penicillin-Procaine

Clinical tetanus is a serious disease with a high mortality. Until recently, antitoxin was considered the drug of choice to combat the disorder. It is well known, however, that tetanus antitoxin is of value only in neutralizing the toxin liberated into the tissues by the active growing bacteria. It has no significant adverse effect on the tetanus bacilli, which are destroyed by tissue phagocytes. The prophylaxis of tetanus by means of the local administration of penicillin was found to be even more effective than prophylaxis with antitoxin alone. Reduction of the mortality from 100 per cent to as low as 5 per cent was observed in many of the animal experiments. The inability of antitoxin to cope with a maximal infection indicates the practical value of penicillin as a prophylactic agent in tetanus, either to supplement the prophylactic dose of antitoxin or to be used in its stead in cases in which it is desirable to prevent sensitization to horse serum.

The results bear out the wisdom of removing the source of toxin with penicillin rather than of depending entirely on antitoxin to neutralize the toxin without an attempt to stop its further production. The use of penicillin-procaine dosages which will maintain a therapeutic level for several days is recommended.—[*Welton I. Taylor and Milan Novak: The Phophylaxis of Tetanus with Penicillin-Procaine. Ann. Surg., 133, (1951): 44.*]

### Paracolin Bacteria in the Bovine Udder

A 19-cow dairy herd suffered an outbreak of mastitis. Treatment with penicillin by the owner and treatment with penicillin and streptomycin by the practicing veterinarian were unsuccessful in subduing the outbreak.

An organism identified as belonging to the paracolon group of enteric bacteria, and closely related to the Ballerup subgroup, was isolated from the milk of 44 quarters of 17 cows at least once, and in some instances as many as 12 times, during an eight-month period.

The outbreak was characterized by sudden attacks of mild acute mastitis of short duration that were observed to occur repeatedly in some cases. The amount of permanent damage to the udders, as determined by palpation, was small.

Intramammary treatment with terramycin, aureomycin, neomycin, and streptomycin was ineffective in ridding the quarters of the paracolon bacteria. There was, however, a lessening in the number of clinical cases during the observation period that may have been due partly to the treatments.—[*S. D. Johnson, D. W. Bruner, and James M. Murphy: Infection of the Bovine Udder with Paracolon Bacteria. Cornell Vet., 41, (1951): 283-288.*]

### Canine Pancreatitis

Cases of diarrhea in dogs that do not respond to routine treatment and cases that relapse after routine treatment should be investigated for the possibility of pancreatic disease. Examination of the stool microscopically for the presence of neutral fat globules is the one means available to all practitioners. The presence of fat globules in the stool, coupled with a gradual emaciation in spite of a vigorous appetite, is adequate evidence of pancreatic disturbance. The medical management available to such patients has yielded excellent results. Concerning the ration, a low fat, a moderate protein, and a high disaccharide intake are prescribed. The deficient natural pancreatic secretion is supplemented by the administration of pancreatin and bile salts compound tablets (3 gr.). Vitamin supplements also are prescribed. Of main concern are vitamins A and D, although vitamins E and K are also in this category. Egg

yolk and milk are relatively high in these substances but therapeutic supplements can be prescribed if deemed necessary.—[*James H. Mark and Robert M. Burleigh: Canine Pancreatitis. North Am. Vet., 32, (1951): 559-561.*]

## Cortisone Therapy in Rheumatoid Arthritis

The adrenocortical hormone, cortisone, and pituitary adrenocorticotropic hormone (ACTH) exert powerful antirheumatic effects when administered to human patients with rheumatoid arthritis.

As experience with cortisone broadens, it becomes increasingly evident that there are distinct limitations, difficulties, and dangers in its use in the treatment of chronic diseases. At the present state of our knowledge, it appears that cortisone may be employed as a powerful weapon in the management of many cases of human rheumatoid arthritis, but it should not be considered as the treatment of choice for most cases, and not as a cure for any case.—[*Edward W. Boland: Prolonged Uninterrupted Cortisone Therapy in Rheumatoid Arthritis. Brit. M. J. (July 28, 1951): 191-199.*]

## Avian Blood Changes Following Injections of Cortisone

Injections of cortisone acetate in mammals, including man, have been followed by a marked reduction in the total number of circulating lymphocytes and eosinophils and a rise in circulating neutrophils. Little information has been available up to the present concerning the action of this drug in the avian species.

Twenty aged White Leghorn hens were injected daily with cortisone acetate for thirteen days. Although not consistent in all birds, the resulting changes in the blood picture nevertheless indicated that they simulated those found in the blood of mammals following cortisone acetate injections, in that there was an increase in the number of heterophils and a decrease in eosinophils and lymphocytes. In general, the increase in the heterophils was not as great in the diseased group as in the normal birds, nor was the decrease in lymphocytes so marked.—[*G. L. Bannister: Avian Blood Changes Following Injections of Cortisone. Canad. J. Comp. Med. and Vet. Sci., 15, (1951): 169-171.*]

## Functional Activity of the Sweat Glands in the Dog

The presence of the sweat glands in the dog, not only in the foot pads but also over the body surface covered with hair, was described first in 1835. These findings were confirmed by a number of investigators. Nevertheless, we have found in several textbooks, monographs of physiology, and scientific encyclopedias a misleading description that in the dog sweat glands are found only in the foot pads. On the other hand, the lack of convincing evidence concerning the functional activity of the sweat glands in the hairy skin of the dog has hitherto led us to believe that this animal does not sweat over the general body surface.

This article is concerned with a demonstration of the sweating response in the hairy skin of the dog to some sudorific drugs and to local heating of the skin.

Findings suggest that the sweat glands in the hairy skin of the dog do not participate actively in the central thermoregulatory mechanism, but that they subserve chiefly the protection of the skin from an excessive rise of temperature.

Additional evidence of the secretory activity of the sweat glands in the dog's hairy skin under the influence of the sudorific drugs and radiant heat has been obtained by histological studies.—[*Tsuyoshi Aoki and Masao Wada: Functional Activity of the Sweat Glands in the Hairy Skin of the Dog. Science, 114, (1951): 123-124.*]

## Newcastle Disease in Chicks

Yolk-conferred passive antibody failed to protect young chicks against intramuscular or intranasal inoculation and contact exposure with Newcastle disease virus. Mortality appeared to be related quantitatively to the amount of yolk antibody obtained by the chicks. In comparable groups of parentally immune chicks, the passively conferred antibody was comparatively less effective in protecting against Newcastle disease viruses of high pathogenicity. With viruses of low pathogenicity, asymptomatic infection occurred, but resulted in development of significant hemagglutination-inhibition titers. Some parentally immune chickens failed to show symptomatic or serological evidence of infection, but on subsequent challenge exposure they resisted infection and showed an anamnestic response of hemagglutination-inhibition antibody.—[*E. R. Doll, W. H. McCollum, and M. E. Wallace: Susceptibility to Newcastle Disease Infection of Chickens from Hens Immunized with Live Virus Vaccines. Am. J. Vet. Res., 12, (July, 1951): 232-239.*]

## Foot-and-Mouth Disease Virus

A Mexican strain (MP-VI) of the Vallee "A" type of foot-and-mouth disease virus was carried through 40 tissue culture serial passages. The cultures routinely showed virus titers in a range of $10^{-5.0}$ to $10^{-6.5}$. Eight additional culture series were successfully carried through eight to 12 passages. A tenth series failed to grow virus beyond the third passage.

The method that proved successful for propagation of this strain of the virus employed Roux flasks as culture containers. To 100 cc. of a modified Baker's buffer solution was added 4 to 25 Gm. of equal parts of upper and lower layers of minced bovine tongue epithelium. The flasks were inoculated with 1 to 15 cc. of seed virus and then laid on their sides in an incubator

maintained at 37 C. for twenty-four hours. During this period, cultures were aërated by a slow flow of equal parts of oxygen and nitrogen that replenished the atmosphere above the surface of the culture. Although 10 to 15 cc. of seed virus were used for routine inoculation in culture passages, 1 cc. of seed virus was found to be sufficient. Cultures prepared with 4 Gm. of equal parts of upper and lower layers of bovine tongue epithelium showed virus titers as high as cultures prepared in amounts up to 25 Gm.

When a modification of Baker's fluid was tried as the medium for propagation of the virus in tissue cultures, the virus failed to grow on serial passage. When 20 per cent ox serum ultrafiltrate was added to the modified medium, it then contained the essential ingredients for virus growth. The addition of nicotinic acid, pantothenic acid, riboflavin, thiamine chloride, pyridoxine, arginine, and lysine to the medium failed to enhance the growth of virus.

There was no evidence as determined by cross-immunity and complement-fixation tests that the serial propagation of the MP-VI strain of virus in tissue cultures changed its antigenic structure or produced aberrant forms. Cattle recovered from induced infection with MP-VI virus, that had been serially passed through tissue cultures, were solidly immune when challenged with native MP-VI virus and the homologous tissue culture virus. Virus propagated in tissue culture was used to produce an aluminum absorbate vaccine similar to that made with virus propagated in the tongues of live cattle. It was found on the limited trials to produce satisfactory immunity in cattle exposed to the native MP-VI virus. —*[Don L. Mace, Howard W. Dunne, Ervin A. Eichhorn, and Fernando Camargo N.: In Vitro Cultivation of the Mexican Strain (Vallee "A" Type) of Foot-and-Mouth Disease Virus. J. Infect. Dis., (1951): 212-223.]*

## Production of Newcastle Disease Hyperimmune Serum in a Horse

In the control of Newcastle disease, there would appear to be a place for the use of hyperimmune serum if it could be produced in considerable quantity. As an example, there are valuable flocks which are irreplaceable because of their blood lines. A product which might be useful in saving these would justify considerable expense. With this in mind, a project was established which had as its objective an attempt to build up a hyperimmune serum in a horse.

A serum containing properties capable of neutralizing Newcastle disease virus has been produced by the administration to a horse of a large initial dose of virus followed by repeated small doses. Hemagglutination-inhibiting antibodies were not produced.—*[Charles A. Mitchell and R. V. L. Walker: Studies in Newcastle Disease. III. Production of a Hyper-immune Serum in a Horse. Canad. J. Comp. Med. and Vet. Sci., 15, (1951): 223-225.]*

## The Public Health Veterinarian in National Defense

The author concludes with the following summary: "The public health veterinarian can, with the authority and responsibility, together with the necessary liaison with the various local, state, and federal agencies be most effective in helping to maintain and improve the health and longevity of man during times of peace as well as during national emergencies. Education and orientation of public health officers and the general public in recognizing the contribution that the veterinarian can make in the control of communicable diseases and in recognizing the value of his services in the protection of the public health are major factors in accomplishing this end."—*[T. A. Todd: The Public Health Veterinarian in National Defense. Am. J. Pub. Health, 41, (1951): 1059-1064.]*—L.V.E.

## Changes in the Endocardium of Pigs Simulate the Rheumatic Stigmata of Man

During the last few years, it has become the custom to diagnose an obvious mitral lesion with a presystolic murmur not simply as old endocarditis with stenosis of the mitral orifice, but as rheumatic mitral stenosis.

It was thought that, should there be a species of animals not subject to rheumatic fever but which does contract bacterial endocarditis, examination of the heart valves would be valuable in disclosing the presence or absence of healed endocarditis. If healed endocarditis were found, it would be of interest to compare the changes with those usually called rheumatic stigmata. It was soon learned that the common pig occasionally has acute endocarditis. Such lesions occur in swine erysipelas and also in hog cholera. While such acute endocarditis is often discussed in veterinary literature, it was of interest to learn that little mention is made of studies on deformed heart valves in pigs, although such changes often have been noted. This is understandable since veterinary investigations usually are stimulated by economic and practical factors and, as a result, descriptions of old endocarditis or old heart lesions are only rarely found in veterinary literature.

This study is based on a gross examination of 1,000 hearts of pigs and on a macroscopic and microscopic examination of 850 additional porcine hearts. These hearts were examined at the stockyards in Chicago at the time of evisceration, about one-half hour after death.

It must be emphasized that these pigs were sent to the stockyards for the sole purpose of processing for the food market. None of them had appeared diseased.

Among 1,650 hearts of apparently healthy pigs over 8 months old when they passed through the stockyards, an old, healed valvular endocarditis was found 175 times. Most commonly, the mitral valve was involved. Also, old subendocardial

thickenings, sometimes with the formation of pockets, were found in the mural endocardium, particularly that of the posterior wall of the left atrium. In only four instances was the left atrial endocardium involved in the absence of endocarditis of the mitral valve. The myocardium showed old fibrous lesions, more pronounced in perivascular areas. Some of these hearts also disclosed old circumscribed pericarditis.

A number of similar changes often are found in human hearts and are sometimes grouped among the so-called rheumatic stigmata.

This study is based on the gross examination of 1,000 hearts of the common pig and on the combined gross and microscopic examination of 850 additional porcine hearts. Two hundred of the first group were less than 8 months of age. None of these 200 hearts showed gross evidence of heart disease. Evidence of old, healed endocarditis was found in approximately 10 per cent of the remaining 1,650 hearts. A recent endocarditis was found in 20 hearts, and in eight it was characterized by huge vegetations. In two of the latter, *Erysipelothrix rhusiopathiae* was recovered from the vegetations. Among the 850 hearts examined grossly and microscopically, old, healed endocarditis of the mitral valve was found in 82 instances; of the left atrial mural endocardium in 78 instances; of the aortic valve in six instances; and of the left ventricular mural endocardium in 16 instances. The myocardium was involved in 62 instances: by acute myocarditis in three; subacute in 14; and true chronic myocarditis in two instances. Myocardial fibrosis was found 38 times and myocardial infarction five times. Lesions which could have been interpreted as either recent or old Aschoff bodies were never found. Although chronic arthritis is not rare in the pig, true rheumatic fever or a rheumatic arthritis has not been observed. It seems likely that the old valvular endocarditis and the old lesions of the left atrial endocardium were the result of healed bacterial endocarditis, caused by organisms relatively commonly found in acute endocarditis in pigs. A marked resemblance was noted between the gross and microscopic changes of the mitral valve and of the left atrium in these porcine hearts and the changes in human hearts usually regarded as the result of old rheumatic endocarditis. Because of this resemblance, the inference is made that many of the heart lesions in man diagnosed as old rheumatic endocarditis, in the absence of Aschoff bodies or structures interpreted as healing Aschoff bodies, may also be regarded as the results of a previous bacterial endocarditis.—[*Otto Saphir and Martin Lowenthal: Changes in the Endocardium of Pigs Simulating the Rheumatic Stigmata of Man. Am. J. Path., 27, (1951): 211-222.*]

### The Veterinarian in Public Health

A committee of the American Journal of Public Health prepared a list of 86 different diseases actually transmissible between animals and man. This list named 20 diseases caused by viruses, 20 by bacteria, 10 by nematodes, 10 by trematodes, 9 by cestodes, 8 by protozoan, 7 by ricketsias, 2 by fungus, with 6 more directly caused by insects and arthropods transferred from animals to man. The author calls attention to the fact that a substantial number of veterinarians (21 candidates in 6 schools) are registering for the public health degree. It is stated that the veterinarian has been accustomed to the concept of protection of populations against crowd diseases and malnutrition and that he fits with special facility into the family of public health.—[*C. E. A. Winslow, Ed.: The Veterinarian in Public Health. Am. J. Pub. Health, 41, (1951): 1122.*]—L.V.E.

## FOREIGN ABSTRACTS

### Pavlov Stomach in the Horse

The authors describe a method of isolating a gastric pouch in the horse. The fifteenth and sixteenth ribs were resected from the costochondral junctions to a point 15 cm. above them. An incision was made through the bed of one of the ribs into the peritoneal cavity. This incision passed through the phrenicocostal sinus, opening the pleural cavity, which was immediately closed by uniting the diaphragmatic and costal pleurae with a continuous suture. The cardiac portion of the stomach was grasped and gradually withdrawn as the tonus was overcome. A portion of the fundus was fixed with clamps and the operation was completed as in the dog. There was often a slight pneumothorax, but it was rapidly resorbed. —[*N. F. Popov, Moscow Veterinary Academy: Isolation of a Gastric Pouch in Horses. Veterinariya, 28, (March, 1951): 38-40.*]—R.E.H.

### Vitamin B Complex Deficiency in Swine

In a brief survey on the vitamin B deficiencies, the author points out the part played by the antivitamins in the avitaminoses of swine and describes the symptoms of vitamin $B_1$ nicotinic acid, pantothenic acid, and of the pyritoxin deficiencies.—[*T. H. Bouchaert: The Vitamin B Complex Deficiency in Swine. Vlaams Diergeneesk. Tijdschr., 20, (1951): 122-127.*]—L.V.E.

### Serodiagnosis of Encephalomyelitis

Identical results were obtained with the complement-fixation test and a virus-bacterial agglutination test. The antigen for the latter was prepared by mixing a filtrate of the virus with a culture of *Proteus mirabilis*. The association of virus and bacteria could not be broken by repeated washing in the centrifuge. Neither virus nor bacteria alone would agglutinate in positive serum. Of 299 exposed animals, 9 of which were clinically ill, 89 gave positive reactions and 46 gave

doubtful reactions. Of 186 unexposed controls, 22 gave doubtful reactions. Agglutination at 1:50 and complement-fixation at 1:25 were regarded as positive.—[*M. V. Revo and K. V. Shmalii, Ukrainian Vet. Res. Inst.: Serodiagnosis of Infectious Encephalomyelitis of Horses. Veterinariya, 28, (May, 1951): 18-21.*]—R.E.H.

## Pure Cultures of Leptospira

Contaminated cultures were passed through a Seitz filter to eliminate bacteria. Optimum results were obtained with 50 to 100 cc. of a culture containing 60 to 70 Leptospira organisms per field. This was filtered over a period of forty-five to sixty minutes. The resulting pure culture attained maximum density in fourteen days. When the original culture contained fewer leptospiras, maximum growth was not reached for tweny-eight to thirty-five days. When the original volume was 10 cc. or less, results were negative.—[*L. S. Norikova, Central Research Lab. for the Fur Industry (USSR): Obtaining Pure Cultures of Leptospira by Filtration. Veterinariya, 28, (May, 1951): 58.*] —R.E.H.

## Preventive Treatment for Rabies

Wounds should be cauterized as soon after the bite as possible, preferably within half an hour, though it may be done with some effect up to forty-eight hours. After forty-eight hours, it is useless to cauterize, but simple antiseptic methods may be used.

The decision on the use of vaccine should be made following the weighing of the danger of the infection from the dog bite as compared with the danger from vaccination to the patient. The author feels that where there is no wound, vaccination should not be resorted to, because of the danger of postvaccination paralysis. The danger from vaccination paralysis is about 0.01 to 0.03 per cent, while the danger of infection with rabies through the unbroken skin in only 0.005 per cent.

There seems to be good reason for withholding vaccination where the patient was bitten by a mouse or rat. These rodents are rarely found infected with rabies, because when they are bitten by rabid dogs, they are usually bitten to death. If the bite causes sickness, it is usually the dumb form of rabies.

*Treatment.*—(A) Cauterization—fuming nitric acid is the drug of choice. If cartilage, bone, or nerve are involved, carbolic acid (90%) should be used. (B) Antiseptic treatment—tr. of iodine, bacylan-para-chloroxylenol cream, or 20 per cent soap. (C) Vaccination—the usual amount is 5.0 cc. of a 2 per cent vaccine, or 0.5 cc. of a 20 per cent vaccine given daily. Fermi's vaccine is given at a daily dosage of 5 cc. of a 5 per cent suspension. Children and babies get a full dose. Weak children are started with ½ dose. If they tolerate this well, they may then be given the full dose. Infants are not given more than 14 injections.

*Treatment in Cases Without Evidence.*—(A) Dog killed soon after biting someone—The dog's head should be examined at a laboratory, and the circumstances of the bite should be investigated. In most instances, the wound is treated as though the animal were actually rabid if there is no evidence that the animal was negative without doubt. Such evidence is available in only a small number of cases, *i.e.*, the animal was under close supervision for a long while, or if he were confined to a house or kennel. (B) Cat bites—because cats in Israel rarely transmit rabies, it is felt that when someone is badly scratched by a cat, the animal should be confined for fourteen days and observed daily.—[*F. G. Sulman, M.D., D.V.M.: Guide to the Preventive Treatment of Rabies. Refuah Vet., 7, 1950.*]—M.E.

## Apicectomy on Dogs

The author reports on apicectomy on dogs, an operation which to date has not been used in veterinary medicine for healing purposes. The operation is generally indicated when a chronic paradentitis apicalis exists.

The operation begins by opening the mucous membrane, then the roots are uncovered, followed by the excochleation of the granulome or the separation and removal of cysts, and finally the amputation of the root by means of a fissure-driller. After the application of sulfonamide powder or penicillin, the incision can either be closed by means of a horse-hair suture, or it can be left open.—[*J. Bodingbauer: Apicectomy on Dogs. Wien. Tierarztl. Monatsschr., 35, (1948): 49.*]—F.K.

## Phase-Contrasting Microscope for Dental Histology

Tooth sections, in spite of their relative thickness (80-300μ), are good subjects for examination with the phase-contrasting microscope.

In order to eliminate the wrong conclusions, a regular reëxamination with normal optics and with polarizing optics is inevitable.—[*J. Bodingbauer: The Use of Phase-Contrasting Microscope for Dental Histology. Mikroskopie, 6, (1951): 114.*]—F.K.

## Cultural Variations in Strains of Pullorum Disease

The writer reports that *Salmonella gallinarum* var. *duisburg* was four times isolated from dead chicks. From the chicks themselves and from the ovary of a hen, non-gas producing intermediate strains were isolated. In one of the latter cases, a wholesale positive reaction to *S. pullorum* antigen was observed on a farm which was previously entirely free from positive reactions. —[*C. A. Van Dorssen: Cultural Variations in Some Strains Isolated from Cases of Pullorum Disease. Tijdschr. Diergeneesk., 75, (1950): 617-621.*]—L.V.E.

## Pasteurellosis in Cattle

*Pasteurella hemolytica* was isolated from cows which succumbed to pasteurellosis. Direct isolation from the organs proved necessary for a correct diagnosis. The injection of material from a lung into a rabbit resulted in the death of this animal due to *Pasteurella multocida*, although from the kidney and liver of the same cow and from the lung of a second cow, *P. hemolytica* could be isolated.—[*J. Jansen, C. A. van Dorssen, H. A. van den Berg, and H. J. Nyland: Pasteurellosis in Cattle Caused by Pasteurella Hemolytica. Tijdschr. Diergeneesk., 75, (1950): 676-683.*]—L.V.E.

## Infectious Diseases of Bali and the Lesser Sunda Islands

The author reports on his observations of infectious cattle diseases in the Lesser Sunda Islands. The communicable diseases are anthrax, hemorrhagic septicemia, glanders, and surra, especially on the islands of Bima and Timor. A review is offered on vaccination in general and on the possibility of the immunization of export cattle against foot-and-mouth disease. The economic importance of vaccination for breeding cattle is pointed out.—[*Mohamd Rosa: Infectious Diseases in Bali and the Lesser Sunda Islands. Indonesian J. Anim. Sci., 58, (1951): 302-320.*]—L.V.E.

## Vaccination Against Newcastle Disease

The author states that, with living vaccines against Newcastle disease, good results have been obtained in the United States. He is inclined to expect that similar results can be secured in Europe. However, one must not forget that the bacillary strains in Europe are much more virulent than the ones which are enzoötic in this country. He remarks that the mortality percentage in Europe ranges between 90 and 100 per cent. In adult birds in the United States, the mortality is not more than 5 per cent; in chicks, 35 per cent. This seems to indicate that in Europe more virulent strains must be used.—[*H. Kunst: The Vaccination Against Newcastle Disease. Tijdschr. Diergeneesk., 75, (1950): 778-781.*]—L.V.E.

## The Egg as a Culture Medium for Vibrio Fetus

The authors state that *Vibrio fetus* is nonpathogenic for mice. It can cause abortion in sheep and cattle and is then to be found in the embryo. Cultivation on incubated chicken eggs was attempted. The organism grew readily in the allantoic fluid of 7- to 9-day-old chicks. Three days after inoculation, there resulted a rich growth of *Vibrio fetus* in the allantoic fluid. The organism also developed in dead embryos, but the culture fluid was then often so cloudy that it was difficult to detect the organism microscopically on blood agar. Thus far, the authors had no opportunity to inoculate eggs with material from sheep and cow embryos.—[*J. Jansen and H. Kunst: On the Egg as a Culture Medium for Vibrio Fetus. Tijdschr. Diergeneesk., 76, (1951): 778-780.*]—L.V.E.

## Salmonella Pullorum Infection Among Chickens

An outbreak of pullorum disease is described which could be traced by the Dutch Poultry Sanitary Board to breeding material imported from the United States. A peculiarity of this outbreak was that the serum of carrier birds did not agglutinate with Dutch and American stained antigens, whereas these birds did show distinct agglutinins with their own strains, living and stained suspensions. These strains which were isolated from ovaries of positive hens, from the altered testes and the parenchymatous organs of a mature positive rooster, from dead chicks, and from incubated eggs were gram-negative, nonmotile bacteria, culturally identical with *Salmonella pullorum*. They were, however, distinguishable by their granular growth in fluid mediums and by a reduced salt stability in living suspension. An antigen prepared with 0.9 per cent NaCl solution, formaldehyde (1%), and crystal violet (0.03%) proved to be stable and tenable for more than one year. The F (farm F) agglutinin demonstrable with this antigen could be formed in chickens but not in rabbits. The formation of this agglutinin could also be demonstrated in chickens immunized by repeated injections with living suspensions of *Salmonella typhosa, Salmonella paratyphi, Salmonella anatis,* and *Salmonella senftenberg.*

Saturation with these strains removed the F agglutinin from a patient's serum. The F agglutinin could also be demonstrated in the serum of any spontaneous carriers of a normal *S. pullorum* infection and of a hen that was experimentally infected with *S. pullorum* standard 11 (BAI). The author concludes that the F strains are rough forms of *S. pullorum* without loss of pathogenecity and probably show resemblance to the salt-sensitive strains isolated by von Roekel from cases of pullorum disease in the United States. By repeated tests with the F strained antigen, the second author was able to remove 201 positive fowl from the 1,828 birds on pedigree breeding farm F. At the last check-up, 100 per cent were negative and good breeding results had been obtained. Owing to the compulsory control of pedigree and commercial breeding farms, all commercial breeders that had purchased chicks from farm F had been registered with the Poultry and Eggs Marketing Board. The Poultry Sanitary Board was able to condemn these farms after blood examination (4 to 30% postive reactors) so that these fowl were excluded from further breeding.—[*C. A. van Dorssen and W. J. Roepke: On*

*a Salmonella Pullorum Infection Among Chickens in Which the Infection Carriers Could Not be Demonstrated by Means of the Usual Anti-Suspensions. Tijdschr. Diergeneesk., 76, (1951): 47-67.*]—L.V.E.

## Anaërobic Bacillary Infections in Domestic Animals in Indonesia

In the course of the years 1937-1941, osteomyelitis bacilli were found to affect 28 buffaloes. From these animals, 54 specimens were subjected to examination. They represented bone marrow lesions, arthritis, the contents of inflamed joints, and intramuscular abscesses. A plump, spore-forming bacillus was demonstrated microscopically. It was obtained in pure culture. The organism was found apathogenic for cavies, rabbits, mice, and rats. The bacillus could not be recovered from the marrow of normal animals.—[*E. C. Kraneveld and Raden Djaenoedin: Anaërobic Bacillary Infections in the Domestic Animals in Indonesia. Indonesian J. Anim. Sci., 58, (1951): 321-334.*]—L.V.E.

## The Red Stomach Worm in Swine

The authors record, for the first time in Belgium, a case of the red stomach worm (*Hyostrongylus rabidus*) of the pig. They submit a detailed description of the lesions produced by this nematode, *i.e.*, a chronic interstitial gastritis with simultaneous atrophy of the glandular epithelium which is transformed into mucous tissue. A brief account of the biology of this parasite is given and the general complications resulting from parasitic action are discussed. With reference to therapy, they stress the necessity to evacuate the vast masses of mucus prior to treatment.—[*J. Thoonen and R. Vercruysse: The Red Stomach Worm (Hyostrongylus rabidus) in Swine. Vlaams Tijdschr. Diergeneesk., 20, (1951): 139-144.*]—L.V.E.

## Sterility in Sows

A study was made of 1,000 porcine genital tracts chosen at random from slaughterhouse material. The weight averaged 105 kg. Forty-seven per cent of the gilts were slaughtered before they reached sexual maturity. Spaying appeared to be useless from an economic point of view. Of the ovulations that occur, 59.9 per cent were on the left ovary, but the embryos were divided equally in both uterine horns by migration. The smaller number of embryos in comparison to corpora lutea seemed to be mainly due to embryonic death. Probably no other part of the sow has so many abnormalities as the genital organs. Some of them cause complete sterility, others only lowered fertility. In 8 of 578 cases (1.4%), a cause of complete sterility was found to be ovarian cysts or tubal abnormalities. One case of pyometra and another one lacking uterine body were found. On the other hand, in several (2.6%) mature animals, medium-sized ovarian cysts were found together with normal corpora lutea. In 20 cases, there were adhesions of the ovaries to the oviduct. Although the tube is permeable, these abnormalities may cause lowered fertility. As the percentage of infertility seems to be low in Holland, a considerable number of these cases, especially in gilts, are likely to be due to anatomical abnormalities in the genital apparatus.—[*P. Goethals: Studies on the Sexual Organs of Sows with Reference to Sterility and Reduced Fertility. Vlaams Diergeneesk. Tijdschr., 20, (1951): 155-165.*]—L.V.E.

## Porcine Obstetrics

The author discusses the indications for cesarean section in the sow, the need of which is most frequently to be considered with reference to the juvenile pelvis. He points out that the majority of sows operated on were farrowing for the first time. He mentions the importance of the history of each case and briefly describes restraint, anesthesia, and postoperative care.

A detailed survey is given of the results of 130 porcine cesarean sections. These were divided into four groups. In the first group (cases in which only live pigs were removed), 42 of 43 cases recovered. In the second group (living and dead, but not emphysematous, pigs removed), 24 of 25 cases recovered. In the third group (dead but not emphysematous pigs), the 24 cases all recovered. In the fourth group (only emphysematous pigs removed), 25 of 38 cases recovered. The total percentage of recovery was 88.46 per cent. Of 113 cases in which the pigs were born by the vaginal route with manual aid, the percentage of recovery was 86.70 per cent. The author's conclusion is that cesarean section deserves the greatest attention of practitioners.—[*H. J. Nooder: On Porcine Obstetrics. Tijdschr. voor Diergeneesk., 76, (1951): 649-672.*]—L.V.E.

## Surface Tension and Antibacterial Action

The author discusses the relation between surface tension and antibacterial activity. He reports on the different factors governing the adsorption of surface active chemotherapeutic substances at the cell surface, and stresses competition phenomena between positively charged chemotherapeutic substances which he studied in his laboratory.—[*L. Massart: On Surface Tension and Antibacterial Action. Vlaams Diergeneesk. Tijdschr., 20, (1951): 145-154.*]—L.V.E.

## Fluorescant Microscopy and Electrocytology

The author submits a detailed description of the principle and technique of fluorescent microscopy in connection with its application to electrocytology. He cites the results obtained by this new technique in the field of medical histophys-

iology, namely, the nervous system, the tonsils, the suprarenal bodies, and the kidneys. The most important results of the electrocytologic studies of the kidneys are extensively described in view of the histologic explanation of the retention of a high penicillin content of the blood and the diuretic action of mercury salts.—[*M. Sebruyns: On Fluorescent Microscopy and Electrocytology. Vlaams Diergeneesk. Tijdschr., 20, (1951): 113-121.*]—L.V.E.

## BOOKS AND REPORTS

### Parasitic Animals

This book of 350 pages is an excellent treatise on the general aspects of animal parasites. It deals with general biological facts, classification, life histories, effects of parasitic animals on their hosts, tissue reactions, and immunity of the host. There are 113 excellent illustrations of animal parasites, life histories, and various organs containing parasitic animals. A discussion of the relationships between parasitic animals and their host indicates that some species are among the most powerful enemies of man and animals.

This book will be most useful for beginning students in parasitology and would be of interest and help to instructors in this field. It would not be too helpful to students in veterinary medicine or to the veterinary practitioner, except for use as general information.—[*Parasitic Animals. By Geoffrey Lapage. 350 pages. Well illustrated. Cambridge University Press, New York, N. Y. 1951. Price $4.00.*]—R. E. REBRASSIER.

### Review of Physiological Chemistry

The aims and scope of this book are well stated in the preface. It "is intended to present the fundamentals of physiological chemistry with emphasis on the accepted facts and concepts of the subject. A concise presentation of the applied and established principles has been favored over that of the theoretical and controversial, leaving further discussion of such material to other texts and to the current reviews. . . . .This 'Review' is intended as a supplement to the standard texts in biochemistry and as a companion volume for the student in such courses."

The field of medical biochemistry is succintly covered and frequent reference is made to clinical tests based on biochemical knowledge. The illustrations and charts have been well selected and are helpful. The first eight chapters are devoted to general and physical chemistry, the chemistry of carbohydrates, lipids, proteins, nucleoproteins and nucleic acid, vitamins, enzymes, and biological oxidation. The next three chapters deal with blood, lymph, and cerebrospinal fluid; respiration; and digestion and absorption. Detoxication is the subject of a single chapter. The last nine chapters take up intermediary metabolism (carbohydrate, fat, protein, and mineral), water balance, calorimetry, liver and kidney function, and the chemistry of tissues.

The author has succeeded in stating briefly the chief facts and conclusions which form the basis of modern medical biochemistry. In order to accomplish this, a certain amount of over-simplification and dogmatism has been necessary. This does not detract from the book's essential purpose, that of a review manual intended for individuals having access to more comprehensive sources of information.—[*Review of Physiological Chemistry. By Harold A. Harper, Ph.D. 3rd ed. 260 pages. 13 illustrations. 12 charts. 23 tables. University Medical Publishers, Palo Alto, Calif. 1951. Price $3.50.*]—D. K. DETWEILER.

### Horses

When the late Henry Fairfield Osborn established a Department of Mammalian Paleontology at the American Museum of Natural History in 1891, one of his chief aims was to assemble a large collection of horses, recent and fossil, and compile all known data about them. From this material, a full history of the horse was eventually to be written. During Osborn's lifetime (which ended in 1935), a tremendous amount of data was accumulated. A large staff worked on the horse program amassing a great stack of portfolios of notes and illustrations and drawers of index cards. Even during Osborn's lifetime, the materials outgrew any possibility of publishing them as he originally planned. This present book, "Horses," is an effort to finally carry out the departmental plan of sixty years' standing on a scale incomparably more modest than was anticipated by Osborn.

The three parts of the book are: Living Horses, The Lineage of the Horse, and Horses and Evolution. These headings reveal the contents quite well. It is a book written for the layman, not the professional evolutionist or curator of museums. It is, as the title page states, the history of the horse family in the modern world and through 60 million years of history. There are 32 excellent plates of modern and historical horses and their skeletons, and of some of the outstanding students of horse ancestry.

Since the book is written in an easy-to-read manner, anyone interested in horses will find it extremely educational as well as fascinating. From the average veterinarian's viewpoint, the first part will be the most interesting and helpful. For those who want more than a passing knowledge of horse history, but do not wish to spend a lifetime reading, this book should "fill the bill." It will also provide a wealth of information on the subject of evolution.—[*Horses. By George Gaylord Simpson. Cloth. 236 pages. Oxford University Press, 114 Fifth Avenue, New York 11, N. Y. 1951. Price $6.50.*]

# THE NEWS

## Make Hotel Reservations Now for Atlantic City June 23-26, 1952

### *Headquarters—Ambassador Hotel*

Beautiful hotels dot the entire length of the Boardwalk in Atlantic City, and several of them will share in the housing of 1952 AVMA convention registrants. There will be good accommodations for everyone but, as always, those who make early reservations will have the best choice.

The form on advertising page 41 of this issue lists three approved hotels that are prepared to furnish excellent accommodations for nearly all who attend the convention. They are the Ambassador, which will be headquarters for all sessions and exhibits, and the Ritz-Carlton and Chelsea, which flank the Ambassador on the east and west.

Other hotels will be selected and added to the list only if these three become filled to capacity; however, anyone desiring to obtain accommodations elsewhere in Atlantic City is welcome to do so and can obtain information by writing to the Housing Bureau at the address shown on the reservation form.

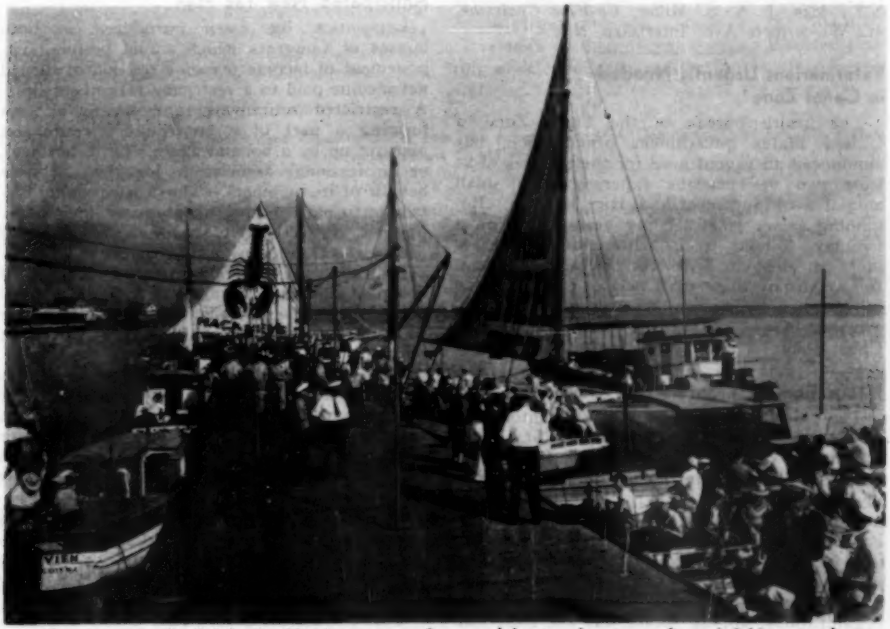
#### Committee on Local Arrangements

The Committee on Local Arrangments for the Atlantic City meeting will be a tri-state group—from New Jersey, New York, and Pennsylvania—composed of the following officers and committee chairmen:

*General Chairman.*—Dr. J. R. Porteus, Box 938, Trenton, N. J.

*Vice-General Chairman.*—Dr. R. P. Lawrence, Holmdel, N. J.

*General Secretary.*—Dr. J. B. Engle, Box 432, Summit, N. J.



**The eastern end of Atlantic City is a mecca for speed boats, pleasure craft, and fishing vessels.**

*Alumni Dinners.*—Dr. H. C. Stephenson, 105 Cornell St., Ithaca, N. Y.

*Entertainment.*—Dr. J. A. S. Millar, 412 Windermere Ave., Interlaken, N. J.

*Exhibits.*—Dr. Walter L. Mackey, Jr., 17 Lincoln Court, Greenwood Village, Trenton 19, N. J.

*Garages, Parking, Airports.*—Dr. Louis Goldberg, 2524 Atlantic Ave., Atlantic City, N. J.

*Golf Tournament.*—Dr. J. M. DeLaney, Mt. Holly, N. J.

*Hotels and Housing.*—Dr. Chas. J. McAnulty, 10 N. Wyoming Ave., Atlantic City, N. J.

*Meeting Rooms and Equipment.*—Dr. Raymond C. Snyder, Walnut St. and Copley Rd., Upper Darby, Pa.

*Motion Pictures.*—Dr. Tevis M. Goldhaft, *Co-Chairman,* E. Landis Ave., Vineland, N. J.; Dr. Nathan E. Wernicoff, *Co-Chairman,* E. Chestnut Ave., Vineland, N. J.

*Publicity.*—Dr. W. C. Glenney, 319 E. Lancaster Ave., Wynnewood, Pa.

*Reception and Hospitality.*—Dr. W. A. Hagan, *Co-Chairman,* New York State Veterinary College, Ithaca, N. Y.; Dr. R. A. Kelser, *Co-Chairman,* University of Pennsylvania, Philadelphia, Pa.

*Registration and Information.*—Dr. C. E. DeCamp, c/o Pitman-Moore Co., 461 Eighth Ave., New York 1, N. Y.

*Women's Activities.*—Mrs. J. H. Spurlock, *Chairman,* 65 N. Main St., Allentown, Pa.; Mrs. J. B. Engle, *Co-Vice Chairman,* Box 432, Summit, N.J.; Mrs. J. A. S. Millar, *Co-Vice Chairman,* 412 Windermere Ave., Interlaken, N.J.

## Veterinarians Urgently Needed in Canal Zone

The health bureau of the Canal Zone, a United States government organization, has announced an urgent need for the services of at least two veterinarians experienced in small animal work and meat and dairy hygiene. Beginning salary is $6,250 per year—based on a five-day, 40-hour week—with annual increases in seven steps to $7,187.50. Detailed information regarding these Civil Service openings may be obtained by writing to Personnel Director, Panama Canal Company, Balboa Heights, Canal Zone.

## International Gerontological Congress

The Second International Gerontological Congress met Sept. 8-14, 1951, at St. Louis, Mo., with representatives present from more than 50 foreign countries. The program was divided into four sections: Section I, biology and medicine; Section II, sociology, psychology, education, and religion; Section III, economics and welfare; and Section IV, medical services, hygiene, and housing.

Through the efforts of many coöperating organizations, among which was the American Veterinary Medical Association, the program and entire Congress was a memorable occasion.

Space does not permit mentioning all papers included in the section on biology and medicine, but the importance and scope of the field of geriatrics and its application to veterinary medicine can be grasped by listing a few of the topics discussed, *i.e.,* inheritance and environment in relation to aging, aging of the nervous system, senescense of the cardiovascular system, nutritional aspects of aging, internal medicine in relation to aging, and pathologic-anatomic aspects of aging.

A paper entitled "Myxomatous and Mucoid Changes in the Sciatic Nerve and Brachial Plexus of Aged Animals" was presented by Dr. H. E. Biester of the Veterinary Research Institute at Ames, Iowa; and Drs. K. H. Randolph, Robert Getty, and F. K. Ramsey of the Department of Veterinary Anatomy, Iowa State College, Ames, presented a paper on "Growth Changes in the Adrenal Gland of the Dog from Birth to Two Years of Age."

An exhibit, visually portraying the role of animal experimentation in the development of medical knowledge and new techniques, was presented by the National Society for Medical Research of Chicago.

s/Robert Getty.

## Practitioners Will Benefit from Anticipated New Tax Plan

Legislation has been introduced in both houses of Congress which would permit postponement of income tax on a portion of earned net income paid to a restricted retirement fund. A restricted retirement fund means a trust forming a part of a contributory retirement plan set up by a bonafide agricultural, business, or professional association for the exclusive benefit of its members. The trustee would distribute to participating members, or their beneficiaries, the respective shares in the assets of the trust.

Basically, the individual retirement plan is designed to give self-employed and professional people the same tax advantages now available to employers who create approved retirement plans for the benefit of their employees.

There have been several bills introduced, the most recent of which is known as the Ives amendment, introduced by Senator Ives, which would have amended the tax bill to provide for the individual retirement plan. Even though the Ives amendment was not adopted by the eighty-second Congress, there is reason to believe that similar legislation will be introduced in the next Congress. Since the Ives amendment seemed to be the most favorably received, legislation introduced in the future will likely be patterned after it.

This is how the plan would work. A retire-

ment or pension plan would be set up by the American Veterinary Medical Association with a bank appointed as trustee to administer the plan. Members of the Association would be permitted to make annual deposits up to 10 per cent of their earned net income but not more than $7,500. For example, a veterinarian who had an earned net income of $10,000 could put up to $1,000 into the retirement fund without paying tax on that $1,000. The deposit would be made directly to the bank acting as trustee. Similar deposits could be made annually during his active professional career. At 60 years of age, or in case of total or permanent disability prior to that age, he could begin to withdraw his deposits together with whatever interest had been earned on them. At the time of withdrawal, he would pay income tax on the amount withdrawn.

Table 1 gives a few examples of the benefits that could be provided under this program compared with the benefits an individual could provide without the tax advantages of this proposed legislation.

The factors which would seem to prompt a whole-hearted support of individual retirement legislation are:

1) That the long period of training required for a veterinarian to reach "peak" income years shortens the peak earning period that can be anticipated.

2) The present rate of taxation makes it more and more difficult for professional people to accumulate in the years of peak earnings enough savings to provide even a moderate income for retirement years when earnings will be low.

3) The revenue laws do provide relief for individuals who are employed, but for the self-employed professional man nothing has been done; therefore inequities exist.

4) This legislation would erase this apparent discrimination against professional and self-employed groups by permitting them to set aside modest sums for retirement benefits from their earned income.

5) From a public interest, as well as a professional viewpoint, it would encourage young men to enter practice in that there would be some tax relief in providing retirement income.

6) Professional people should welcome the opportunity to establish, on a private enterprise basis, their own retirement fund.

## CONCLUSION

The AVMA staff and officers have been aware of this proposed legislation for several months. Contacts have been maintained in this regard with the other professional associations and banking interests (interested in maintaining trusts). It was determined several months ago that veterinarians would be eligible to participate if such legislation was enacted.

The Association has not as yet taken definite action. The matter will be considered at the semi-annual meeting of the Executive Board, November 29 and 30, and any future AVMA actions will be governed by the policy established at that meeting. However, the Board of Governors at their recent meeting directed that this article be prepared for publication in the JOURNAL for the information of the members.

**TABLE 1 — Examples of Retirement Benefits Under the Ives Amendment with Comparisons of Benefits Which Individuals Alone Could Provide**

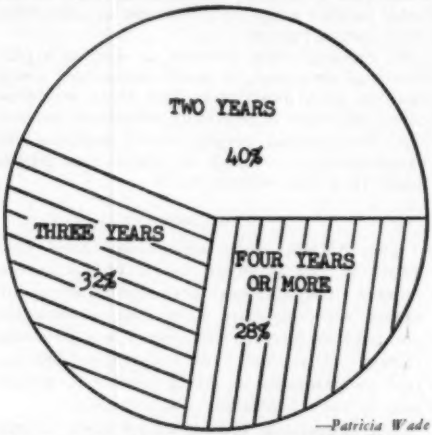
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|
| Starting age | Net earned income | Annual contributions | Approximate net after taxes | Accumulation of col. 3 at 3% to age 60 | Accumulation of col. 4 at 3% to age 60 | Annual benefits (col. 5) for 15 years (after taxes) | Annual benefits (col. 6) for 15 years (after taxes) | % of columns 8 to 7 |
| 35 | 7,500 | 750 | 565 | 36,750 | 24,375 | 2,665<br>2,930* | 2,040 | 77%<br>70 |
| 40 | 10,000 | 1,000 | 710 | 27,675 | 17,840 | 2,070<br>2,320* | 1,495 | 72<br>64 |
| 50 | 15,000 | 1,500 | 990 | 17,710 | 11,055 | 1,420<br>1,485* | 925 | 65<br>62 |
| 30 | | | | | | | | |
| 10 yr. @ | 7,500 | 750 | 565 | 15,990 | 9,625 | | | |
| 10 yr. @ | 10,000 | 1,000 | 710 | 15,870 | 9,735 | | | |
| 10 yr. @ | 15,000 | 1,500 | 990 | 17,710 | 11,055 | | | |
| | | | | 49,570 | 30,415 | 3,490<br>3,762* | 2,550 | 73<br>68 |

*Annual benefits after age 65.

1—Age at which individual starts making deposits to the retirement trust. 2—Earned net income against which the 10 per cent limitation applies. 3—The annual contribution to the retirement trust on the basis of 10 per cent of net earned income. 4—The portion of the amount in column 3 which would remain in the hands of the individual if subject to income tax under the split income tax rates of the Revenue Act of 1951. 5—Amount at which annual deposits in column 3 would accumulate at age 60 if invested at 3 per cent interest. 6—Amount at which annual deposits in column 4 would accumulate at age 60 if invested at 3 per cent interest. 7—Annual benefits for fifteen years which could be expected from the accumulation in column 5 after taxes based on split income provisions of the Revenue Act of 1951. 8—Annual benefits after income tax for fifteen years from the accumulation in column 6. 9—Approximate percentage of the benefits under this proposed legislation which the individual alone could provide.

# Enrollment in Colleges of Veterinary Medicine, 1951-1952 and Preprofessional Training of First-Year Students

For the past five years, the enrollment of the schools of veterinary medicine in the United States and Canada has been published in the December issue of the JOURNAL. This information is again shown in table 2. Data pertaining to the preprofessional training of students enrolled in the professional school last year was shown by two circle graphs in the May, 1951, JOURNAL, p. 338. These graphs depicted the number of years of preveterinary college training of the students entering professional schools in 1947-1948 and 1949-1950. When compared with similar data for the first-year students admitted to the schools in the United States in 1951, it reveals that an increasing number of the applicants admitted have had more than the minimum two years.




—*Patricia Wade*

**Graph 1—Preprofessional college education of students entering four-year course in veterinary medicine —fall, 1951.**

TABLE 1

| Freshmen | Years of Pre-Veterinary College | | |
|---|---|---|---|
| | 2 yr. | 3 yr. | 4 yr. or more |
| 1947-1948* | 41% | 12% | 13% |
| 1949-1950 | 47% | 27% | 26% |
| 1951 | 40% | 32% | 28% |

*Of the students admitted during these years, 34 per cent had one year of preprofessional college training.

Of the first-year students admitted this year, 32 per cent had degrees when they entered the professional college. The 881 applicants accepted

**TABLE 2—Student Enrollment for the Academic Year 1951-1952**

| Approved Schools | Fresh. | Soph. | Jun. | Sen. | Spec. | Grad.* | Total | 1950 | Change |
|---|---|---|---|---|---|---|---|---|---|
| Alabama Polytechnic Institute | 63 | 62 | 60 | 59 | 0 | 3 | 247 | 262 | −15 |
| Colorado A. & M. College | 61 | 56 | 61 | 57 | 0 | 1 | 236 | 239 | − 3 |
| Georgia, University of | 61 | 52 | 50 | 46 | 0 | 0 | 209 | 205 | + 4 |
| Iowa State College | 67 | 60 | 58 | 63 | 0 | 11 | 259 | 263 | − 4 |
| Kansas State College | 60 | 59 | 66 | 70 | 0 | 7 | 262 | 275 | −13 |
| Michigan State College | 64 | 60 | 52 | 67 | 0 | 14 | 257 | 292 | −35 |
| Minnesota, University of | 50 | 48 | 48 | 45 | 0 | 26 | 217 | 188 | +29 |
| Missouri, University of | 30 | 31 | 30 | 28 | 0 | 3 | 122 | 123 | − 1 |
| New York State Veterinary College | 50 | 49 | 47 | 48 | 0 | 19 | 213 | 206 | + 7 |
| Ohio State University | 71 | 70 | 65 | 69 | 0 | 19 | 294 | 285 | + 9 |
| Oklahoma A. & M. College | 39 | 35 | 30 | 36 | 0 | 0 | 140 | 133 | + 7 |
| Ontario Veterinary College | 72 | 80 | 71 | 93 | 0 | 0 | 316 | 380 | −64 |
| Pennsylvania, University of | 53 | 49 | 42 | 39 | 2 | 2 | 187 | 188 | − 1 |
| Quebec Veterinary School | 24 | 20 | 26 | 26 | 0 | 26 | 122 | 86 | +36 |
| Texas A. & M. College | 63 | 46 | 48 | 61 | 0 | 8 | 226 | 223 | + 3 |
| Tuskegee Institute | 20 | 11 | 3 | 5 | 0 | 0 | 39 | 35 | + 4 |
| Washington, State College of | 46 | 48 | 42 | 49 | 1 | 4 | 190 | 186 | + 4 |
| Totals | 894 | 836 | 799 | 861 | 3 | 143 | 3,536 | 3,569 | −33 |
| New Schools | | | | | | | | | |
| California, University of | 52 | 52 | 52 | 42 | 0 | 9 | 207 | 153 | +54 |
| Illinois, University of | 31 | 34 | 22 | 24 | 0 | 13 | 124 | 92 | +32 |
| Totals | 83 | 86 | 74 | 66 | 0 | 22 | 331 | 245 | +86 |
| Totals (approved and new schools) | 977 | 922 | 873 | 927 | 3 | 165 | 3,867 | 3,814 | +53 |

*Hold degree in veterinary medicine, working on advanced degree.

in 1951 were selected from 2,676 applicants, a ratio of 1:3. Figures, gathered by the AVMA office, about the number of applicants from which the first-year students were selected in 1950, revealed that 872 of 3,607 applicants were accepted, a ratio of approximately 1:4.

### Dr. Shope Appreciates Honorary Membership

Richard E. Shope, M.D., associate director of the Merck Institute for Therapeutic Research, who was elected to Honorary Membership at the Eighty-Eighth annual meeting of the AVMA, has written the following letter:

Dear Dr. Hardenbergh:

I was very pleased to receive official notice from you that I had been elected to honorary membership in the American Veterinary Medical Association.

Despite my training in human medicine, my active interests have always been in the field of veterinary medicine, partly because the opportunities for genuine progress seemed greater there and partly because the diseases in which I have been most interested have been diseases of animals.

It is, therefore, very gratifying to have my work recognized in the field to which I am most attracted, and I should like to take this occasion to thank the Association, through you, for the honor that has been done me. I am delighted to finally be one of your group.

Yours sincerely,
s/RICHARD E. SHOPE.

### Meeting of Veterinary Division of Land-Grant College Association

The Division of Veterinary Medicine of the Association of Land-Grant Colleges and Universities held its third annual meeting at the Rice Hotel in Houston, Texas, on Nov. 13-15, 1951. The scientific program included the following speakers and their subjects.

Dean C. B. Hutchison, vice-president of the University of California and dean of the College of Agriculture, Berkeley: "The Land-Grant College Association."

Mr. Fred J. Rossiter, associate director, Office of Foreign Agricultural Relations, U.S. Department of Agriculture, Washington, D. C.: "The Foreign Aid Program."

Dean George Hart, School of Veterinary Medicine, University of California, Davis, was moderator of a panel on "The Present Trend of Agricultural College Curriculums." Other panel members were deans of agricultural colleges, F. E. Price, Oregon; Frank Welch, Kentucky; A. W. Gibson, New York; and Henry Schmitz, Minnesota.

Dr. W. T. Oglesby, Department of Veterinary Science, Louisiana State University, Baton Rouge, was moderator of a panel on "The Pre-professional Curriculum." Other panel participants were deans of veterinary colleges, Thomas J. Jones, Georgia; Floyd Cross, Colorado; Walter Krill, Ohio; and W. A. Hagan, New York.

Dr. Tom Jones, professor of medical and dental illustration, College of Medicine, University of Illinois, Urbana; "The Use of Slides, Charts, and Models as Visual Aids."

Mr. R. L. Webster, director of information, U. S. Department of Agriculture, Washington, D. C.: "The USDA Film Library and Its Use."

s/W. T. OGLESBY, *Secretary*.

## STUDENT CHAPTER ACTIVITIES

**Georgia Chapter.**—Regular meetings of the University of Georgia Student Chapter of the AVMA are scheduled for the second and fourth Monday of each month. At the first meeting of the school term on September 26, the faculty members and new students were introduced.

s/RUBEL BELL, *Corresponding Secretary*.

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**Missouri Chapter.**—At the October 15 meeting of the University of Missouri Student Chapter of the AVMA, members saw a film on cancer, "From One Cell," and enjoyed a talk on cytology by a representative from the zoölogy department. Shortly after the beginning of the fall term, the Chapter staged an open house for the medical students at the University which was an outstanding success. The medical students plan to reciprocate.

s/HARRY C. ESCHENROEDER, *Secretary*.

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**Pennsylvania Chapter.**—The University of Pennsylvania Student Chapter of the AVMA got off to an outstanding start at its October 3 meeting, with an impressive program featuring **Dr. C. D. Van Houweling,** assistant executive secretary of the AVMA, who enlightened the group with an interesting review of some of the many activities of the parent organization.

**Dean Kelser** presented the 1914 Class Medal to Miss Doris Sell, member of the freshman

**Dean Kelser presenting 1914 Class Medal to Miss Doris Sell, member of the freshman class with the highest general average for the year.**

class with the highest general average for the year. The Borden Award of $300 and a certificate was presented to Miss Margaret Petrak, senior student with the highest scholastic average during the previous three years. **Dr. Donald Lee,** faculty advisor for the chapter, presented some statistics on the class of '55. Through

**Dean Kelser presenting the Borden award to Miss Margaret Petrak, senior student with the highest scholastic average during the first three years.**

the courtesy of Mrs. Kelser and faculty wives, refreshments added a fitting climax to an enjoyable evening for the 152 students, faculty members, and guests present.

S/RICHARD H. DONOVAN, *Publicity Chairman.*

## WOMEN'S AUXILIARY

**Friendships in the Auxiliary.**—George Santayana, in his essay on friendship, wrote, "Friendship sometimes hangs on passing pleasure and amusements, or on special pursuits." This quotation applies particularly to friendships in the Auxiliary.

It takes only a bit of observation and listening at any meeting of the AVMA to know that many of the wives of veterinarians have been friends for years. They have followed the growth and development of each other's families with keen interest. They very proudly show snapshots of children and tell of special achievements made by sons and daughters. Most of these people have no opportunity of visiting with each other, except at the annual meeting. Perhaps they do exchange a few letters on the occasion of a special joy or deep sorrow in the family. But these friendships, nevertheless, are sincere and lasting. During solitary and free moments, these friends provide a storehouse for pleasant reminiscing.

A special event, an amusing situation, mutual friends, or just by chance being seated opposite each other at a luncheon table has provided the opportunity for an acquaintance that has developed into a real friendship.

More than passing pleasure and amusements, however, are the special pursuits which encourage friendships in the Auxiliary. All wives of veterinarians have a common bond that brings them together in the Auxiliary. These special pursuits are summed up in the objectives of the Auxiliary, namely, to assist the Association in advancing the science and art of veterinary medicine, including their relationship to the public health; to assist selected veterinary students with loans and awards; and to strengthen the bonds of friendship among women connected with the veterinary profession throughout the world. It is these special pursuits which develop and strengthen friendships in the Auxiliary.

S/(MRS. C. E.) HELEN A. BILD, *President.*

• • •

**Michiana Auxiliary.**—The Women's Auxiliary to the Michiana Veterinary Medical Association met at the LaSalle Hotel in South Bend on October 11. After dinner in the Bronzewood Room with their husbands, the ladies adjourned to their meeting. Mrs. Elnora Hartman, policewoman from South Bend, gave an interesting and informative speech on her work with delinquent girls. President Mrs. J. J. Fishler presided at the business meeting. Two reports from the national meeting of the Auxiliary to the AVMA were read. After reports from the standing committees, the meeting was adjourned.

S/(MRS. D. L.) HELEN W. MILLER, *Secretary.*

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**Mississippi Valley Auxiliary.**—The fourteenth annual meeting of the Women's Auxiliary to the Mississippi Valley Veterinary Medical Association was held Oct. 31-Nov. 1, 1951, in the Hotel Pere Marquette in Peoria. After the business meeting, members enjoyed luncheon and entertainment in the Early American Room of the Hotel, the annual banquet, and brunch at the Mount Hawley Country Club.

• • •

**Pennsylvania Auxiliary.**—The Women's Auxiliary to the Pennsylvania State Veterinary Medical Association held its annual meeting at the Bedford Springs Hotel, Bedford, on Oct. 10-12, 1951, with approximately 100 in attendance. The program included a demonstration on fixing snack trays for entertaining; fashion show of furs by Clearfield Fur Co.; tour of the state trout hatchery, Reynoldsdale; and a talk (with demonstrations) of flower arrangements.

New officers of the Auxiliary are Mrs. D. C. Service, Elwood City, president; Mrs. R. D. Hoffman, Bedford, vice-president; and Mrs. G. L. Hartenstein, III, York, secretary-treasurer.

S/(MRS. G. L.) MARIAN HARTENSTEIN, *Secretary.*

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**West Virginia Auxiliary.**—The Women's Auxiliary to the West Virginia Veterinary Medical Association met on Oct. 8, 1951, for a luncheon and business session at the Hotel Prichard, Huntington. Seventeen members were present at the business session with Pres-

ident Mrs. C. F. Hale, Beckley, presiding. It was voted to give $10 to the Loan Fund of the Women's Auxiliary to the AVMA, and $5 to the International Women's Auxiliary to the Veterinary Profession to help defray the cost of publishing and distributing their *Bulletin*.

Officers elected for the ensuing year are: Mrs. Elvin R. Coon, Charleston, president; Mrs. Wm. E. Trussell, Charles Town, vice-president; and Mrs. Howard P. Buckley, White Sulphur Springs, secretary-treasurer.

The local committee arranged sightseeing trips to a doll hospital and a glass factory.

s/(MRS. ELVIN R.) VALENA H. COON, *President*.

### Plans for International Women's Auxiliary Groups Made at Scandinavian Veterinary Congress

During the meeting of the Scandinavian Veterinary Congress in Stockholm last August (*see* picture under Scandinavia in Foreign News), Mrs. H. F. Wirstad of Oslo, vice-president of the International Women's Auxiliary to the Veterinary Profession, spoke to the women assembled at the Congress. From that meeting the women of each country selected their leaders, and plans were made for individual auxiliary groups. Mrs. Margit Blom of Sweden was selected to develop that country's auxiliary program. Mrs. Moltzen Nielsen will head the group in Denmark, and Mrs. A. Backman in Finland. The organization in Norway had already made tentative plans for its women's auxiliary programs.

## APPLICATIONS

### Applicants — Members of Constituent Associations

**In accordance with paragraph (b) of Section 2, Article X, of the Administrative By-Laws, as revised at the annual meeting of the House of Representatives, Aug. 18, 1951, in Milwaukee, Wis., the names of applicants residing within the jurisdictional limits of the constituent associations shall be published once in the JOURNAL.**

**The following applicants have been certified as members of the constituent association that has jurisdiction over the area in which the applicant resides. This certification was made by the secretary of the constituent association in accordance with Section 2, Article X, of the Administrative By-Laws.**

JASMIN, HUBERT L.
740 Guy Street, Montreal, Que.
D.V.M., Ontario Veterinary College, 1951.

KNAPPLE, FRED L.
Lexington, Neb.
D.V.M., St. Joseph Veterinary College, 1919.

MORRISON, JOHN E.
P. O. Box 68, Opelousas, La.
D.V.M., Alabama Polytechnic Institute, 1950.

PORT, WALTER G.
603 Market Street, Prosser, Wash.
D.V.M., Kansas City Veterinary College, 1917.

TWETE, LEONARD R.
Thief River Falls, Minn.
D.V.M., Ohio State University, 1922.

WEIL, SEYMOUR L.
4263 E. Broad St., Columbus, Ohio.
D.V.M., Ohio State University, 1946.

WERNER, JULES J.
1909 Flatbush Ave., Brooklyn 10, N. Y.
D.V.M., New York State Veterinary College, 1936.

### Applicants — Not Members of Constituent Associations

**In accordance with paragraph (b) of Section 2, Article X, of the Administrative By-Laws, as revised at the annual meeting of the House of Representatives, Aug. 18, 1951, in Milwaukee, Wis., notice of all applications from applicants residing outside of the jurisdictional limits of the constituent associations, and members of the Armed Forces, shall be published in the JOURNAL for two successive months. The first notice shall give the applicant's full name, school, and year of graduation, post office address, and the names of his endorsers.**

#### First Listing

CORDERO, RAFAEL
Veterinary Station Hospital, Fort Bliss, Texas.
D.V.M. Texas A. & M. College, 1946.
Vouchers: Floyd H. Blackburn and John M. Broadwell.

#### Second Listing

GOLDSBORO, ROBERT F., 3650 Medical Group Sampson Air Force Base, N. Y.

## U. S. GOVERNMENT

**Veterinary Personnel Changes.**—The following changes in the force of veterinarians in the U. S. Bureau of Animal Industry are reported as of Oct. 12, 1951.

NEW APPOINTMENTS
Willard G. Adams, Lansing, Mich.
Francis D. Armstrong, St. Paul, Minn.
Herminio A. Bernas, Los Angeles, Calif.
George F. Bradshaw, Raleigh, N. Car.
Richard W. Brown, Jr., Beltsville, Md.
James A. Faughn, St. Louis, Mo.
Charles E. Moon, Olympia, Wash.
Waldo H. Palmer, Jacksonville, Fla.
Charles E. Titus, Cedar Rapids, Iowa.

CANCELLATIONS
Willis E. Boucher, Montgomery, Ala.
Walter B. Crowl, Los Angeles, Calif.
Harry L. Gibson, Dayton, Ohio.

MILITARY FURLOUGHS
Wilbur B. Cochran, Raleigh, N. Car.
Fred M. Harris, Olympia, Wash.
Milford R. Seymour, St. Paul, Minn.

RESIGNATIONS
James O. Briggs, Jacksonville, Fla.
William L. Collins, Jacksonville, Fla.
Floyd W. Frank, Pullman, Wash.
Harold F. Groves, Columbus, Ohio.
Raymond B. Lomax, West Fargo, N. Dak.
George W. Moreland, Fort Worth, Texas.
Herman R. Seibold, Washington, D.C.
Hendrik Versluis, Salt Lake City, Utah.

TERMINATION
John R. Krohn, St. Paul, Minn.

RETIREMENTS
Willard G. Adams, Lansing, Mich.
Mack B. Davis, Los Angeles, Calif.
Leo V. Hardy, Washington, D.C.
David E. Settle, Sacramento, Calif.

DEATHS
Young J. Aiken, Fort Worth, Texas.
Errol K. Smith, Los Angeles, Calif.

TRANSFERS

Arthur G. Beagle, from Madison, Wis., to Portland, Ore.

Donald E. DeTray, from Beltsville, Md., to Washington, D.C.

Jordan E. Rasmussen, from Phoenix, Ariz., to Madison, Wis.

Luke R. Sinclair, from Beltsville, Md., to office of Foreign Agricultural Relations.

Alfonso Smith, from Omaha, Neb., to Columbus, Ohio.

Wiley B. Tanner, from Mexico City, Mex., to Topeka, Kan.

Millard L. Tierce, from Mexico City, Mex., to Fort Worth, Texas.

James P. Torrey, from Beltsville, Md., to Ames, Iowa.

Haskell S. Tubiash, from Washington, D.C., to Denver, Colo.

Moses R. Zinober, from Beltsville, Md., to Ames, Iowa.

## AMONG THE STATES AND PROVINCES

### Arizona

**Pima County Banquet.**—Members of the Pima County Veterinary Medical Association and their wives enjoyed a dinner dance on Oct. 17, 1951. The banquet, an annual affair, was held at the Palomino Club in Tucson.

s/R. W. ADAMI, *Resident Secretary.*

### California

**State Officers.**—Officers of the California State Veterinary Medical Association for 1951-1952 are Drs. C. E. Wicktor, Los Angeles, president; A. R. Inman, Visalia, first vice-president; Paul D. DeLay, Sacramento, second vice-president; W. J. Zontine, Lancaster, third vice-president; and Oscar J. Kron, San Francisco, treasurer. Mr. Charles S. Travers was re-appointed executive secretary.

s/E. E. JONES, *Resident Secretary.*

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**Dr. Meyer Honored.**—Dr. Karl F. Meyer (D.V.M., M.D., Ph.D.), distinguished University of California pathologist and bacteriologist, was selected as one of the 1951 winners of the annual Lasker Awards of the American Public Health Service, one of the nation's highest medical honors.

Dr. Meyers has contributed outstanding research work toward the control of brucellosis, psittacosis, encephalitis, tick fever, and leptospirosis. His research also led to the control of botulism which threatened the California canning industry thirty years ago. The high standards he set for food canning have been followed by the industry on a nationwide scale since that time.

Dr. Meyers was born in Basel Switzerland, educated in Zurich, and took graduate work at a number of leading European institutions. He is a member of several medical associations, including the AVMA, and is the author of numerous scientific papers.

s/E. E. JONES, *Resident Secretary.*

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**Legacy for Canine Disease Research.**—Dr. Thomas G. Beard (COL '27), of Los Angeles, received a check for $12,941.91 from the estate of Mrs. Katherine Griswold Smith, to be used for research on diseases of small animals. Dr. Beard, who cared for Mrs. Smith's Wire-Haired Terriers for twenty years, offered the legacy to his alma mater, Colorado A. & M. College at Fort Collins, because "They have the equipment to carry on such work, equipment I don't have." The research will probably be on skin diseases of dogs.

s/E. E. JONES, *Resident Secretary.*

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**Civil Service Examination for Veterinarians.**—Immediate employment at various locations in the state will be offered veterinarians who are successful in the civil service examination to be held Feb. 9, 1952, on a nation-wide basis. Since no previous veterinary experience is required, the examination represents a particularly attractive opportunity to recent graduates and to students in their senior year.

The final date for filing an application is Jan. 9, 1952. Further information and application forms may be obtained from the State Personnel Board, 1015 L St., Sacramento 14, Calif.

### Georgia

**Dr. Tierkel to Tour Foreign Countries.**—Dr. Ernest S. Tierkel (UP '42), in charge of rabies control activities for the U. S. Public Health Services, Federal Security Agency, Communicable Disease Center, Atlanta, Ga., left Oct. 6, 1951, for a three-month tour of foreign countries under the auspices of the World Health Organization. After a visit to WHO headquarters in Geneva, Switzerland, Dr. Tierkel will visit South Africa, Iraq, Syria, Egypt, Lebanon, Jordan, Israel, India, Pakistan, Indonesia, and Malaya.

s/S. SCHEIDY.

### Illinois

**Veterinary Conference and Short Course.**—The thirty-second annual Illinois Veterinary Conference and Extension Short Course was held in the new veterinary medicine building on the campus of the University of Illinois, Urbana, Oct. 11-12, 1951.

Conference speakers included **Drs. Paul Gambrel,** Winnebago; **Howard Johnson,** U. S. Bureau of Animal Industry, Washington, D.C.; **C. A. Lemen,** Warrensburg; **N. D. Lusk,** Crete; **J. M. Nelson,** DeKalb; **H. E. Pinkerton,** Fort Dodge Laboratories, Fort Dodge, Iowa; **J. D. Ray,** Corn States Serum Company, Omaha, Neb.; **W. H. Riser,** Skokie; **Lt. Col. J. H. Rust,** (V.C.) U. S. Army; **A. L. Starkey,** McLean; **S. W. Terrill,** Animal Science Department, University of Illinois; **R. A. Thompson,** Division of Livestock Industry, Springfield; **M. J. Twiehaus,** Kansas State College, Manhattan; and **H. P. Wessels,** Geneva.

Outstanding features of the literary program were discussions of hog cholera, swine nutrition, treatment of reproductive failures in dairy cattle, canine distemper, hard pad disease, infectious hepatitis, and atomic energy and veterinary medicine.

Clinical demonstrations included canine blood collection and infusion, caudal and epidural anesthesia in the dog, removal of supramammary teats, cesarean section on the sow, and autopsy examinations and laboratory demonstrations.

s/ROBERT GRAHAM, *Dean.*

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**Animal Care Panel.**—The second annual meeting of the Animal Care Panel was held at Thorne Hall, Northwestern University, Chicago.

The following speakers presented papers: **Drs. N. R. Brewer,** University of Chicago; **W. A. Young,** general manager of the Chicago Anti-Cruelty Society; **L. E. Fisher,** Berwyn; **H. B. Harding** and **B. J. Cohen,** Northwestern University Medical School, Chicago; **C. F. Schlotthauer,** Mayo Foundation, Rochester, Minn.; **C. N. W. Cumming,** Carworth Farms, New City, N. Y.; **P. B. Sawin** and **Roscoe B. Jackson,** Bar Harbor, Maine; **C. A. Slanetz,** College of Physicians and Surgeons, Columbia University, New York City; **R. T. Habermann,** National Institutes of Health, Bethesda, Md.; **Arnold Lehman,** U. S. Food and Drug Administration, Washington, D. C.; **C. C. Hargreaves,** Eli Lilly Co., Indianapolis, Ind.; **Elihu Bond** and **R. J. Flynn,** University of Illinois College of Medicine and Argonne National Laboratory, Chicago.

Among the subjects discussed were handling and housing of cats, handling of laboratory primates, distemper prophylaxis in dogs, salmonellosis in mice, problems in nutrition and breeding of laboratory animals, insecticides in research animal quarters, and standardization of animal care procedures.

s/BENNETT J. COHEN, *Secretary.*

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**Mississippi Valley Association.**—The forty-sixth annual meeting of the Mississippi Valley Veterinary Medical Association was held Oct. 31-Nov. 1, 1951, in the Hotel Pere Marquette, Peoria. After the president's address, greetings were extended by **Dr. C. D. Van Houweling,** assistant executive secretary of the AVMA, and **Dr. C. R. Collins,** president of the Illinois Veterinary Medical Association.

One of the outstanding features of the program was a joint session with the Illinois Feed Association on swine nutrition featuring the following speakers: **Drs. J. A. Hofer,** Michigan State College, East Lansing; **C. D. Van Houweling; W. S. Gochenour,** director of Pitman-Moore Biological Farm, Zionsville, Ind.; **Messrs. Arthur J. McLoughlin,** sales manager, Arcady Farms Milling Co., Chicago; **Cy W. Sievert,** feed consultant, American Dry Milk Institute, Chicago; **Walter Berger,** president of the American Feed Manufacturers Association, Chicago; and **Robert Zinn,** Allied Mills Research Farm, Libertyville, Ill.

Other speakers included **Drs. Roger P. Link,** University of Illinois, Urbana; **Grant Misener,** Chicago; **G. Woods,** extension veterinarian, University of Illinois, Urbana; **C. M. Rodgers,** Blandinsville; **John Dick,** Fort Dodge Laboratories, Fort Dodge, Iowa; and **Mr. Warren Brown,** Peoria, who discussed income tax problems. Other topics discussed in this second session of the program included x-disease in cattle, small animal practice, swine brucellosis, large animal practice, and hog cholera vaccine.

s/R. J. KIRKPATRICK, *Secretary.*

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**Dedication of Gaines Research Kennels.**—A symposium on "The Newer Knowledge About Dogs" was held in conjunction with the dedication of the new Gaines research Kennels in Kankakee on Oct. 24, 1951.

The following speakers comprised the symposium: **Drs. Robert Graham,** dean, University of Illinois College of Veterinary Medicine, Urbana, was chairman; **Leonard W. Goss** and **R. E. Rebrassier,** Ohio State University; **H. S. Brundage,** Bensenville; **John W. Bernotavicz,** research director, Gaines Division of General Foods Corporation; **N. R. Brewster,** research associate in physiology and superintendent of animal quarters, University of Chicago; **A. E. Schaefer,** Alabama Polytechnic Institute; **J. A. Baker,** director, Research Laboratory for Diseases of Dogs, Cornell University; **Hadley C. Stephenson,** Cornell University; **Jesse Sampson, C. C. Morrill, T. H. Brasmer,** and **N. D. Levine,** of the University of Illinois College of Veterinary Medicine.

Subjects discussed in the symposium included recent findings in breeding, kennel management, nutrition, infectious and noninfectious diseases, and parasitic diseases.

Approximately 150 veterinarians, in addition to members of the junior and senior classes of the University of Illinois College of Veterinary Medicine, attended the dedication exercises and luncheon at the Hieland Country Club.

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**Dr. Bain Joins Staff of Veterinary College.**—Dr. Lawrence R. Bain (KSC '41), formerly in practice at Abingdon, has been appointed instructor in veterinary pathology and hygiene at the University of Illinois College of Veterinary Medicine at Urbana.

Dr. Bain was employed by the U. S. Bureau of Animal Industry in Kansas City for six months after graduation and since then has practiced in McCune, Kan., and Plymouth and Abingdon, Ill.

## Indiana

**Ninth District Association.**—On Sept. 21,

1951, members of the Ninth District (Ind.) Veterinary Medical Association met in Seymour to hear **Dr. George Burch** of Zionsville discuss recent experiences in research at the Pitman-Moore Research Farm. New officers of this Association are Drs. J. R. Davis, Franklin, president; and M. G. Talbert, Franklin, secretary-treasurer.

On October 19, members of the Association met at the Country Club at Columbus to hear **Dr. Albin Henry**, an optometrist of Columbus, discuss his experience in Korea before the war. He illustrated his talk with interesting motion pictures.

Dr. and Mrs. Paul Little and Mr. and Mrs. Ed. Bowlen of Columbus served as hosts for the meeting.

s/J. L. KIXMILLER, *Resident Secretary.*

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**Northwestern Association.**—The Northwestern Indiana Veterinary Medical Association met in Pine Village on Sept. 27, 1951, to hear **Dr. A. Henry Craige,** Indianapolis, talk on milk fever and acetonemia. New officers of the Association are Drs. Chas. Lindborg, Monticello, president; and Galen E. Krill, Boswell, secretary-treasurer.

s/J. L. KIXMILLER, *Resident Secretary.*

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**Tenth District Association.**—**Dr. R. C. Klussendorf,** Terre Haute, representing Commercial Solvents, spoke on digestive disturbances in the bovine species at the October 18 meeting of the Tenth District (Ind.) Veterinary Medical Association at Cambridge City.

Association officers are Drs. W. E. Welbourn, Winchester, president; and John Templeton, McCordsville, secretary-treasurer.

Drs. R. W. Wann, Cambridge City, and Chas. Albertson, Milton, and their wives served as hosts at the meeting.

s/J. L. KIXMILLER, *Resident Secretary.*

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**Wabash Valley Association.**—On Oct. 17, 1951, the Wabash Valley Veterinary Medical Association met in Sportsmans Club on Beaver Dam Lake to hear **Dr. R. W. Elrod,** state veterinarian, speak on civil defense and what might be expected of the veterinarian in a national emergency. **Mrs. John Beamer,** Washington, D. C., wife of congressman John Beamer, told of some of the interesting places in Washington and illustrated her talk with slides.

Officers of the Association are Drs. A. L. Keim, Kokomo, president; and D. J. Myers, Wabash, secretary-treasurer.

Dr. and Mrs. G. E. Dershem, Roann, and Dr. and Mrs. N. A. Turner, Wabash, were hosts at the meeting.

s/J. L. KIXMILLER, *Resident Secretary.*

## Iowa

**Southwestern Association.**—The Southwestern Iowa Veterinary Medical Association met in Council Bluffs, on Oct. 2, 1951.

Speakers on the program were **Drs. E. A. Benbrook,** Iowa State College, Ames; **H. U. Garrett,** Iowa state veterinarian, Des Moines; **E. P. Anderson,** Nebraska state veterinarian, Lincoln; **C. W. Brown,** U. S. Bureau of Animal Industry, Des Moines; **E. R. Frank,** Kansas State College, Manhattan; **J. K. DeWar,** Cherokee; **F. S. Sharp,** Ute; **Messrs. L. E. Harris,** Lincoln, Neb.; and **F. E. Plaff,** Borden Co., Council Bluffs.

Officers elected at this meeting are Drs. J. W. Sutcliffe, Audubon, president; V. U. Thomson, Clearfield, vice-president; and G. A. Hawthorne, Clarinda, secretary-treasurer.

s/F. B. YOUNG, *Resident Secretary.*

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**Midwest Small Animal Association.**—The fourteenth annual meeting of the Midwest Small Animal Association and a regional meeting of the American Animal Hospital Association were held Nov. 14-15, 1951, at the Hotel Burlington in Burlington.

Speakers were **Drs. Ralph E. Ruggles,** Moline, Ill., president of the A.A.H.A.; **C. E. DeCamp,** Pitman-Moore, New York City; **J. H. Krichel,** Keokuk; **M. L. Morris,** Topeka, Kan.; and **Paul Gambrel,** Winnebago, Ill.

Topics discussed included canine hepatitis, distemper, and allied conditions; demonstrations of making the Thomas splint; relationship of diet to practice; and building a small animal practice in a rural area.

s/J. PORTER COBLE, *Secretary.*

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**Eastern Association.**—The thirty-eighth annual meeting of the Eastern Iowa Veterinary Association was held Oct. 11-12, 1951, in the Hotel Montrose in Cedar Rapids.

Speakers on the program included **Drs. H. U. Garrett,** Des Moines, chief, Division of Animal Industry, Iowa Department of Agriculture.; **Chas. W. Brown,** Des Moines, veterinarian in charge, U. S. BAI; **Harry W. Schoening,** in charge, Pathological Division, U. S. BAI; **A. W. Krause,** Cherokee; **W. S. Gochenour,** Zionsville, Ind., director of biological laboratories, Pitman-Moore Co.; **H. C. H. Kernkamp,** University of Minnesota, St. Paul; **C. L. Nelson,** Jewell; **John P. Arnold,** University of Minnesota, St. Paul; **M. J. Johnson,** Iowa State College, Ames; **J. O. Buck,** Sioux Falls, S. Dak.; and **Jas. C. Carey,** West Liberty. **Dr. John B. Herrick,** Extension Division, Iowa State College, Ames, showed the motion picture "Functional Anatomy and Physiology of the Bovine Reproductive Tract."

Included in the program were discussions of brucellosis, hog cholera and other swine diseases, poultry practice problems, bovine teat surgery, diseases of feedlot cattle, and anthrax.

**Dr. C. D. Lee,** Ames, greeted the group on behalf of the Iowa Veterinary Medical Association, of which he is president.

Officers elected at the meeting are Drs. M. C. Larson, Keystone, president; D. T. White, Williamsburg, vice-president; N. R. Waggoner, Olin, secretary; and A. R. Menary, Cedar Rapids, treasurer.

s/F. B. YOUNG, *Resident Secretary.*
s/N. R. WAGGONER, *Secretary.*

## Massachusetts

**Dr. Coffin To Investigate Parrot Diseases.**—Dr. David L. Coffin (UP '38), head of the Department of Pathology at the Angell Memorial Animal Hospital of the Massachusetts S.P.C.A. in Boston, left October 16 for a two-month trip to Lima, Peru, to conduct a scientific investigation of parrot diseases.

Before proceeding with his expedition to the headwaters of the Amazon River, Dr. Coffin will address the First Pan American Congress, October 20-26 at Lima, on the subject of infectious diseases of dogs, and will also participate in the section devoted to veterinary education.

Dr. Coffin's journey to South America was made possible by a legacy received by the Massachusetts S.P.C.A., given for the specific purpose of studying diseases of parrots. A complete report of his findings will be available to veterinarians, and others interested in the subject matter, following his return to Boston.

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**Annual Registration of Veterinarians.**—A law, effective Jan. 1, 1952, will require all veterinarians practicing in the Commonwealth of Massachusetts to register and pay a $5.00 fee.

s/GERRY B. SCHNELLE.

## Minnesota

**Veterinary Exhibit at National Barrow Show.**—At the "Hog College" of the National Barrow Show at Austin, Minn., Sept. 12-15, 1951, an exhibit titled "Parasites Prevent Profits" was displayed. It depicted in a simple and graphic manner the life cycles of the common parasites of swine. Specimens of the adult parasites were shown, together with pertinent information on their prevention and control. The material was prepared at the School of Veterinary Medicine, University of Minnesota, and was sponsored by the Minnesota State Veterinary Medical Society.

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**Officers of the Twin City Society.**—Officers of the Twin City Veterinary Medical Society are Drs. Fred W. Gehrman, Minneapolis, president; George E. Keller, St. Paul, first vice-president; Walter N. Peterson, Stillwater, second vice-president; and B. S. Pomeroy, St. Paul, secretary-treasurer.

s/HENRY J. GRIFFITHS, *Resident Secretary.*

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**Construction Begun on Basic Science Building.**—Early in August, 1951, work was begun on the basic science building of the School of Veterinary Medicine of the University of Minnesota. The state legislature appropriated $600,000 for constructing and equipping the three-story building, which will accommodate administrative offices, the sections of bacteriology, pathology, and parasitology, and provide basement facilities for the housing of limited numbers of small laboratory animals for use in teaching and research. In the future, when funds become available, it is hoped that a veterinary library will be added as part of a fourth story of this building and that the original three stories will be extended to provide permanent quarters for the sections of anatomy, physiology, and pharmacology.

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**New Staff Members at School of Veterinary Medicine.**—Dr. Archie L. Good (UP '43) was recently appointed an instructor in veterinary physiology at the School of Veterinary Medicine. Prior to coming to Minnesota, he was on the staff of the School of Veterinary Medicine, Kansas State College, where he received the degree of Master of Science in 1950.

In July, 1951, Dr. Robert M. Leary (MIN '51) was appointed to the staff of the veterinary diagnosis laboratory. He was a member of the first class to graduate from the School of Veterinary Medicine of the University of Minnesota.

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**Central Association.**—The Central Minnesota Veterinary Association met in Willmar on Sept. 23, 1951, to hear **Dr. H. E. Hanson** of the University of Minnesota discuss swine nutrition. New officers of the Association are Drs. G. A. Pollman, Appleton, president; M. S. Thorpe, Canby, vice-president; A. P. Antroinen, Ortonville, secretary; and T. O. Eliason, Kerkhoven, treasurer.

s/HENRY J. GRIFFITHS, *Resident Secretary.*

## Missouri

**Kansas City Association.**—**Dr. A. V. Young,** practitioner from Shreveport, La., discussed beef cattle practice at the October 16 meeting of the Kansas City Veterinary Medical Association. Other program activities included a film on bovine (allergic) dermatitis and a discussion of general practice problems.

s/K. M. CURTS, *Secretary.*

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**Southeast Association.**—The fall meeting of the Southeast Missouri Veterinary Medical Association was held on Sept. 19, 1951, at Dr. W. R. Sheets' hospital, and was attended by approximately 30 veterinarians and guests.

Participants in the program were **Drs. Anthony Bott,** East St. Louis, Ill.; **E. F. Ebert,** Columbia; **Leroy Atkinson,** Kirkwood; and **L. A. Rosner,** Jefferson City.

New officers of the Association are Drs. T. D. Wills, Cape Girardeau, president; M. L. Tate, Kennett, vice-president; and F. A. Stepp, Sikeston, reëlected secretary-treasurer. Dr. W. L. Baker, Jr., invited the Association to meet with him in Kennett on April 18, 1952, for its spring meeting.

Members enjoyed a steak dinner at Ozark Village.

s/F. A. STEPP, *Secretary.*

## New York

**New York City Association.**—The regular meeting of the Veterinary Medical Association of New York City, Inc., was held at the New York Academy of Sciences on Oct. 3, 1951. The motion picture, "Mechanisms of Cell Division," was shown through the courtesy of First Army Central Film Library, Ft. Wadsworth, Staten Island, N. Y.

**Dr. G. P. Lockhart,** Montevideo, Uruguay, vice-president of the Uruguayan Veterinary Medical Association, member of directors of the veterinary school in Montevideo, and foreign corresponding secretary of the AVMA, gave a short address of greeting from the Uruguay Veterinary Medical Association. **Mr. Philip S. Gelb,** executive secretary, New York State Society for Medical Research, representing the Animal Welfare Division, spoke on a proposed medical research pound law. **Dr. Lloyd Miller,** chief, U. S. Pharmacopeia Revision Committee, spoke of the extension of the scope of the "Pharmacopeia."

A clinical-pathological conference was conducted by **Dr. Frank Bloom,** associate in pathology, Long Island College of Medicine.

Drs. Estelle H. Geller and Jane L. Williamson were announced as new members.

s/C. R. SCHROEDER, *Secretary.*

## North Carolina

**Central Carolina Association.**—The Central Carolina Veterinary Medical Association met Oct. 10, 1951, in Greensboro, N. Car., to hear **Dr. W. D. Collins,** Winston-Salem, discuss brucellosis vaccination. The meeting was attended by 40 veterinarians and their wives.

s/CLYDE W. YOUNG, *Resident Secretary.*

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**Personal.**—Dr. John Scott Meredith (ALA '47), Statesville, reported for duty in the U. S. Army in September, 1951.

s/CLYDE W. YOUNG, *Resident Secretary.*

## Ontario

**The Public Health Veterinarian and Milk Production.**—At the present time, it is officially estimated that over 99 per cent of all the milk sold in Ontario is pasteurized. The percentage consumed would be slightly lower than this figure as very few producers pasteurize milk for home consumption.—*Canad. J. Comp. Med. and Vet. Sci. August, 1951, p. 180.*

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**Sir Thomas Dalling Visits O.V.C. Campus.**—On Sept. 14-15, 1951, Sir Thomas Dalling, chief veterinary officer, British Ministry of Agriculture, visited the Ontario Veterinary College campus, to examine facilities and meet members of the faculty. Sir Thomas, who visited the

**Left to right — Drs. Wm. Moynihan and Orlan Hall, officers of the federal Health of Animals Division; Sir Thomas Dalling; and Dr. T. L. Jones, acting principal, Ontario Veterinary College.**

campus six years ago when the building program had just begun, was well pleased with the progress made.

s/T. LLOYD JONES, *Resident Secretary.*

## Oregon

**Dr. Vawter Joins Staff of State College.**—Dr. L. R. Vawter (KSC '18), formerly of the Nevada Experiment Station, Reno, will be in charge of the recently established diagnostic laboratory, a part of the Department of Veterinary Medicine of the Oregon State College at Corvallis. This laboratory was set up to serve the veterinarians and livestock people of the state.

Dr. Vawter, with some thirty years of experience in the field of veterinary medicine, made an excellent record as a pathologist and research worker while at the Nevada Experiment Station.

s/J. N. SHAW, *Head, Department of Veterinary Medicine.*

## Pennsylvania

**Keystone Association.**—The Keystone Veterinary Medical Association met at the University of Pennsylvania School of Veterinary Medicine on Oct. 31, 1951. Guest speaker of the evening was **Dr. R. M. Sears,** veterinarian for the DuPont Fox Catcher Farms which ranges about 2,000 head of beef cattle.

s/RAYMOND C. SNYDER, *Secretary.*

## Tennessee

**Short Course.**—The University of Tennessee Short Course for veterinarians was held at the College of Agriculture, Knoxville, on Sept. 6-7, 1951.

An interesting and informative program was presented by such outstanding speakers as **Dr. Paul L. Piercy**, head of the Department of Physiology, University of Georgia, who discussed "Anaplasmosis" and "Sterility in Cattle Due to Hormone Imbalances." **Dr. George Moore**, head of the Department of Large Animal Medicine, Michigan State College, presented papers on "Digestive Disturbances in Cattle," "Problems in Cattle Practice," and "Improved Bovine Surgical Techniques." **Dr. Charles K. Whitehair**, research professor, Oklahoma A. & M. College, reported on "So-Called Baby Pig Disease," "Nutritional Problems in Swine," and "Problems in Sheep Practice." **Dr. W. A. Mackenzie**, head, Department of Small Animal Medicine, University of Georgia, discussed "Infectious Canine Hepatitis" and "Viral Infections Involving the Central Nervous System of the Dog."

s/DENNIS SIKES.

### Washington

**State Association.**—The Washington State Veterinary Medical Association held its annual business meeting at Seattle on Oct. 5-6, 1951, with 75 members in attendance.

**Dr. Charles O. Seward**, Bremerton, was moderator of a small animal panel. Other members of the panel were **Drs. George V. Ott**, Pullman; **Lewis K. Todd**, Tacoma; and **Frederick C. Cummings**, Seattle.

**Dr. Michael O. Mulqueeney**, Sunnyside, was moderator of a large animal panel. Other participants in this panel were **Drs. Wm. F. Harris**, Puyallup; **John D. Stevens**, Sequim; **George Jones**, Sedro Wooley; and **T. Robert Phelps**, Vancouver.

Other program speakers included **Drs. Ray Bradbury** of Mt. Vernon; **A. S. Lazarus**, Department of Virology, University of Washington; **Fred Shigley**, Olympia, inspector in charge of the BAI; and **M. O. Barnes**, Olympia, state supervisor of dairy and livestock.

**Dr. Peter MacKintosh**, Yakima, reported on the AVMA meeting in Milwaukee.

The following officers were elected for the ensuing year: Drs. John Stevens, Sequim, president; Phillip M. Hinze, Carnation, vice-president; J. L. Ellis, Olympia, secretary-treasurer. Trustees elected are Drs. P. G. MacKintosh, Yakima; E. E. Wegner, Pullman; James C. Kraft, Seattle; Wm. F. Harris, Puyallup; LaMar H. Gaw, Oak Harbor; and T. Robert Phelps, Vancouver.

s/J. L. ELLIS, *Secretary.*

### West Virginia

**Fall Meeting.**—The fall meeting of the West Virginia Veterinary Medical Association was held at the Hotel Prichard, Huntington, on Oct. 7-8, 1951.

Guest speakers included **Drs. L. E. Johnson**, Ohio State University; **D. L. Proctor**, Lexington, Ky., **Albert C. Esposito** (M.D.), Huntington; and **E. R. Coon**, U. S. Bureau of Animal Industry, Charleston.

**Dr. S. E. Hershey**, Charleston, delegate to the AVMA convention in Milwaukee, reported on that meeting, and **Dr. Stewart Smith**, president of Marshall College, Huntington, was guest speaker at the banquet.

Officers elected for the ensuing year are Drs. Harry J. Fallon, Huntington, president; James F. Mann, Lewisburg, vice-president; and E. R. Coon, Charleston, secretary-treasurer.

s/E. R. COON, *Secretary.*

### Wisconsin

**Central Association.**—The Central Wisconsin Veterinary Association met at Chippewa Falls on Sept. 12, 1951, with approximately 60 veterinarians in attendance. **Dr. J. T. Schwab** reported on the summer meeting of the state Association and also gave his formal report as the delegate to the House of Representatives of the AVMA. **Dr. A. F. Sellers**, of the University of Minnesota, discussed grass tetany, acetonemia, and similar diseases, and **Dr. A. Erdmann**, Madison, told of progress on the new state brucellosis control program.

s/J. T. SCHWAB, *President,*
*Wisconsin Veterinary Medical Association.*

## FOREIGN NEWS

### Africa

**Lapinized Virus Vaccine to Suppress Active Rinderpest.**—Viable lyophilized vaccine, prepared from the tissues of rabbits infected with the "lapinized" strain of rinderpest virus, has been used successfully in East Africa since 1948 to immunize some types of cattle against rinderpest.

Circumstances under which lapinized virus vaccine was used in highly susceptible grade cattle in the presence of active rinderpest are described.

In a large milking herd, the vaccine appeared to curtail the course of the disease and to have little adverse effect on the milk yield. In other herds, either infected or with reasonable opportunities for contact, the vaccine established a firm immunity.

The immunity established by the vaccine prevented extension of the disease to cattle on remote areas of the farm and to cattle on neighboring farms.—*The Indian Vet. J., May, 1951, pp. 422-430.*

### Denmark

**Dr. Blom Receives Appointment.**—On Aug. 15, 1951, Dr. Erik Blom, of the State Veterinary Serum Laboratory at Copenhagen, received an appointment to Luxembourg for one year, under the expanded technical assistance program

of FAO. Dr. Blom will serve as an adviser to the Luxembourg government in artificial insemination and sterility work in cattle.

## Scandinavia

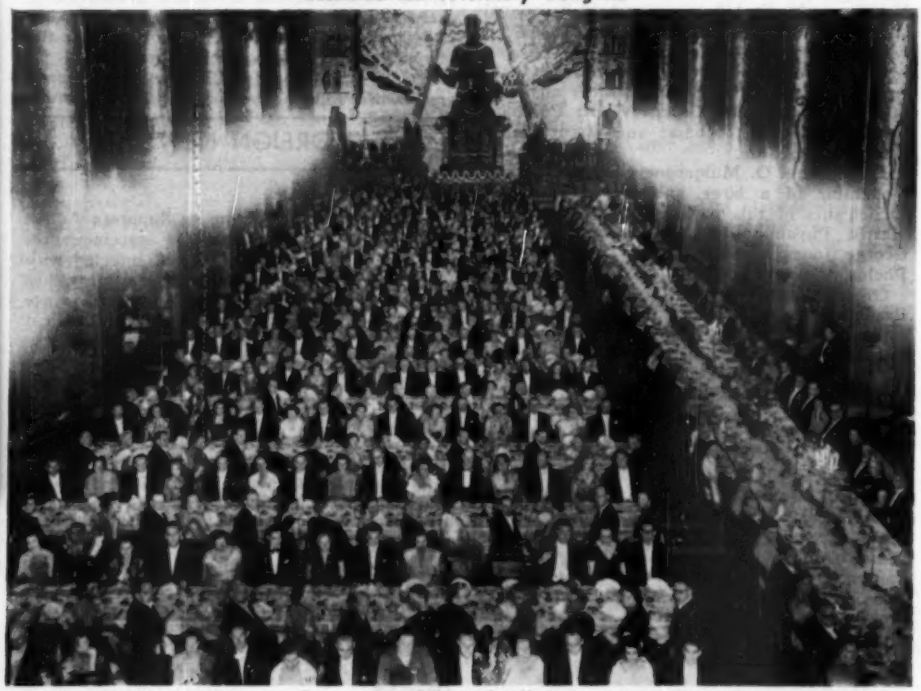
**Veterinary Association for Sexual Physiology and Pathology.**—The Scandinavian Veterinary Association for Sexual Physiology and Sexual Pathology held its first convention Aug. 8-9, 1951, at the Royal Veterinary College in Stockholm, Sweden, under the chairmanship of Prof. Nils Lagerlöf. The purpose of this newly organized society is to increase the scientific coöperation and exchange of experience between laboratory and field veterinarians, in the Scandinavian countries, who are working on problems of reproduction in domestic animals. Approximately 200 members from Denmark, Finland, Iceland, Norway, and Sweden were present.

The scientific program, consisting of 25 papers of highly practical significance, was divided into three sections: (1) experiences from the field work of artificial insemination in cattle, 11 papers; (2) enzoötic sterility with special reference to *Vibrio fetus* infection, 9 papers; (3) sterility in the bull, and improvement of diagnostic methods, 5 papers.

Especially interesting in the second session was the experience of Norwegian workers on the spread of enzoötic sterility, by artificial insemination, to districts where such breeding problems had never existed before. The rigorous measures necessary to halt the spread of the infection and the demand for improvements of diagnostic methods gave rise to a lively discussion.

The next meeting of the Association will be held in Oslo, Norway, in 1954. The program of that meeting will be divided into the following sections: (1) sexual physiology; (2) enzoötic sterility; and (3) clinical aspects of mastitis.

## Scandinavian Veterinary Congress



**The Scandinavian Veterinary Congress was held in Stockholm in August, 1951. Convening every three years, the meetings alternate in the various Scandinavian countries.**

**The officers of the individual organizations are: Denmark—Dr. S. O. Koch, president; Dr. K. Seidel, secretary. Finland—Dr. V. Rislakki, president; Dr. H. Westermark, secretary. Sweden—Dr. G. Bjorkman, president; Dr. G. T. Krantz, secretary. Norway—Dr. H. Lund-Larsen, president; Dr. F. Gjesdal, secretary.**

**Through the courtesy of Mrs. A. E. Bott, we are able to publish this picture of the Congress.**

The founder, Prof. Nils Lagerlöf, of the Royal Veterinary College at Stockholm, was elected chairman of the Association, and Dr. Erik Blom, of the State Veterinary Serum Laboratory, Copenhagen, was elected secretary.

S/ERICK BLOM, *Secretary.*

## EMERGENCY PLANNING

### PERSONNEL

A recent information bulletin from the Rusk National Advisory Committee has two items of interest to the profession in it, as follows:

#### Members of Organized Reserve Units

"In the agreement between the Department of Defense and the Health Resources Advisory Committee, the state advisory committees have the right to review reserve officers who are being called to active duty to determine their essentiality or availability. There was an exception made for members of Organized Reserve Units and those officers who applied for a commission with a request for immediate active duty.

"At the present time, the various Army commands and Naval districts, as well as the offices of the Surgeons General, are receiving requests for delay in active duty orders on some individuals who are members of Organized Reserve Units. In these cases state committees may be asked to render an opinion as to the essentiality of such officers."

#### Recent Graduates

"It has come to the attention of the National Advisory Committee that some individuals who may be in either priority I, II, III, or IV, and who obtained their professional degree this June, have failed to register as required under Public Law 779. If they are under 26 years of age they are, of course, regular registrants, but should also register as special registrants. It is imperative that these individuals register at once. (Of course, if they are in the active Reserve it is not necessary for them to register.)"

## VETERINARY MILITARY SERVICE

**Opening of New Facilities of Army Medical Service Meat and Dairy Hygiene School.**—"The coöperation between the Veterinary Corps and the Quartermaster Corps in improving the facilities of the Army Medical Services Meat and Dairy Hygiene School is an excellent example of two services pooling their resources and working for a common cause—the health of Army and Air Force personnel."

This statement was made Oct. 9, 1951, by Brig. Gen. James A. McCallam, chief, Veterinary Division, Office of the Surgeon General, Department of the Army, to 200 members of the Chicago meat, dairy, and poultry industry and the Armed Forces attending the opening of the Army Medical Services Meat and Dairy Hygiene School's new facilities in the Chicago Quartermaster Depot. These facilities include improved classrooms, laboratories, and housing for the students. General McCallam also commended the officials of the industry in the Chicago area in permitting the school to use their facilities for demonstration purposes in instructing Army and Air Force Veterinary Corps officers and enlisted men.

According to Col. C. W. Betzold, the Army Medical Services Meat and Dairy Hygiene School was established under the name of the Veterinary School of Meat and Dairy Hygiene at the Chicago Quartermaster Depot in 1920. In 1922, the name was changed to the Army Veterinary School and, in 1923, it was transferred to Washington, D.C. In 1940, the War Department transferred the school back to the Chicago Quartermaster Depot because it is immediately adjacent to the world's largest meat-packing center.

*—Official U. S. Army Photograph*

**The new classrooms of the Army Medical Service Meat and Dairy Hygiene School in the Chicago Quartermaster Depot have the latest in lighting equipment, and each receeding row of desks is on a raised platform. Major Robert J. Miller, V.C., (not shown) conducts a class of enlisted men on fluid milk and the sanitation aspects of milk plants.**

The first class, consisting of 166 hours of instruction, was started Nov. 25, 1940, with 17 officers enrolled. The seventy-third class graduated 30 officers on Oct. 19, 1951. To date, 1,412 officers have been graduated from the School since 1940.

The meat and dairy hygiene course for enlisted personnel was started at the Chicago Quartermaster Depot on Dec. 3, 1945. This course was formerly given at the medical Training Center, William Beaumont General Hospital, El Paso, Texas. The first class had seven students with 264 hours of instruction. The present (35th) class of 39 students has 352 hours of instruction. To date, 1,165 enlisted men have graduated from the school since 1945.

• • •

**Major English Awarded Bronze Star.**—Major Burt W. English (KSC '40) was recently awarded the Bronze Star Medal for "outstanding service in the field of preventive medicine during the period 27 June 1950 through 1 November 1950 . . . . Through his untiring efforts, devotion to duty and the personal feeling which he assumed for the health of the troops both in Japan and Korea, he has fulfilled a mission that reflects great credit upon himself, the

Medical Service and the United States Air Force."

Major English is currently assigned as director of Veterinary Services, Office of the Surgeon, Headquarters 314th Air Division, Japan.

Major Burt W. English (right) being congratulated by Brig. Gen. Delmar T. Spivey, commanding general, Far East Air Forces 314th Air Division, on receiving the Bronze Star Medal.

Major English's father, Dr. Burt English (COR '02), lives at 619 San Pedro, San Antonio, Texas.

• • •

**Colonel Miller Named to New Air Force Post.**—Lieutenant Colonel Robert R. Miller (OSU '43) has been named inspector general for the Air Force Veterinary Service, with headquarters at Kelly Air Force Base, San Antonio, Texas. He previously was assigned as a staff officer on the Armed Forces Medical Policy Council in the office of the secretary of defense, Washington, D. C. He also served as deputy chief of the Veterinary Division, Office of the Surgeon General, Headquarters U. S. Air Force.

Colonel Robert R. Miller

## BIRTHS

Dr. (API '47) and Mrs. C. H. Myers, Paxton, Ill., announce the birth of a daughter on Sept. 13, 1951.

Dr. (COR '51) and Mrs. Louis L. Nangeroni, Ithaca, N. Y., announce the birth of a daughter, Jill Elaine, on Oct. 1, 1951.

Dr. (OSU '39) and Mrs. Willard Strawn, Toledo, Ohio, announce the birth of a son, David John, on Oct. 2, 1951.

## DEATHS

**Young J. Aiken** (KCV '16), Las Vegas, Nev., died Sept. 15, 1951. Dr. Aiken, a former member of the AVMA, was employed by the U. S. Bureau of Animal Industry.

★**Martin E. Howell** (STJ '16), 61, Columbus, Ohio, died Oct. 7, 1951, of a heart attack. Dr. Howell was a field representative for the United Serum Company prior to the organization of Allied Laboratories, in 1929, and had been on the Allied staff since then. He was admitted to the AVMA in 1928. Dr. Howell is survived by his widow, a son, a daughter, and two grandchildren.

★**Adam T. McLean** (ONT '10), 68, Moncton, N. B., died on Aug. 14, 1951. Dr. McLean, a general practitioner, was a member of the AVMA, and resident secretary for New Brunswick.

**Harry T. Moss** (CIN '06), Dayton, Ohio, died June 8, 1951. Dr. Moss was a small animal practitioner.

**William V. Nesbitt** (CVC '06), Lincoln, Ill., died May 15, 1951. Dr. Nesbitt was a general practitioner.

★**Frederick Gustav Steinbach** (UP '12), 62, Wildwood Crest, N. J., died Oct. 10, 1951. Dr. Steinbach, who had practiced in Wildwood Crest since 1912, was admitted to the AVMA in 1913. He is survived by his widow, a son, Dr. Karl Steinbach (UP '39), and his father.

**Francis J. Ulm** (CVC '93), Joliet, Ill., died early in 1951. Dr. Ulm had been a small animal practitioner.

★**Arthur E. Wharton** (COL '25), 50, San Antonio, Texas, died Sept. 30, 1951. Dr. Wharton was a member of the AVMA.

★**Edward A. Wilson** (UP '23), 53, Emmaus, Pa., died Sept. 9, 1951. Dr. Wilson was a member of the Pennsylvania Veterinary Medical Association and of the AVMA.

★Indicates members of the AVMA.

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Department of Veterinary Medicine

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# COMING MEETINGS

**Notices of Coming Meetings must be received by 4th of month preceding date of issue**

Kentucky, University of. Short course and conference for veterinarians. Animal Pathology Building, University of Kentucky, Lexington, Ky., Dec. 5-6, 1951. T. J. Stearns, Live Stock Exchange Building, Room 114, Bourbon Stockyards, Louisville, Ky., secretary.

Nebraska State Veterinary Medical Association. Annual meeting. Dec. 5-7, 1951. Ordella Geisler, 919 L St., Lincoln, Neb., secretary.

Montana Veterinary Medical Association. Annual winter meeting. Billings, Mont., Dec. 8-9, 1951. E. A. Tunnicliff, Montana State College, Bozeman, Mont., secretary.

American Association for the Advancement of Science. Annual meeting. Convention Hall, adjacent to the University of Pennsylvania School of Medicine, Philadelphia, Pa., Dec. 26-31, 1951. R. L. Taylor, 1515 Massachusetts Ave., N.W., Washington 5, D.C., assistant administrative secretary.

Ohio State Veterinary Medical Association. Annual meeting. Deshler-Wallick Hotel, Columbus, Ohio, Jan. 2-4, 1952. Fred J. Kingma, Ohio State University, Columbus, Ohio, secretary.

Oklahoma Veterinary Medical Association. Annual winter meeting. Mayo Hotel, Tulsa, Okla., Jan. 7-8, 1952. Lewis H. Moe, 1736 W. Third Ave., Stillwater, Okla., secretary.

University of Pennsylvania. Conference for veterinarians. University of Pennsylvania, Philadelphia, Pa., Jan. 7-8, 1952. R. A. Kelser, dean, School of Veterinary Medicine.

Wisconsin Veterinary Medical Association. Annual meeting. Schroeder Hotel, Milwaukee, Wis., Jan. 8-10, 1952. B. A. Beach, Genetics Building, Madison 6, Wis., secretary.

New York State Veterinary College. Conference for veterinarians. Cornell University, Ithaca, N. Y., Jan. 9-11, 1952. W. A. Hagan, dean.

Tennessee Veterinary Medical Association. Annual meeting. Reed House, Chattanooga, Tenn., Jan. 14-15, 1952. H. W. Hayes, 734 Boardway North East, Knoxville, Tenn., secretary.

Kansas Veterinary Medical Association. Annual meeting. New Town House Hotel, Kansas City, Kan., Jan. 14-16, 1952. This is to be a joint meeting with the Missouri Veterinary Medical Association. Olin W. Morris, Parsons, Kan., secretary.

Minnesota State Veterinary Medical Society. Annual meeting. St. Paul Hotel, St. Paul, Minn., Jan. 14-16, 1952. B. S. Pomeroy, University Farm, St. Paul 1, Minn., secretary.

Missouri Veterinary Medical Association. Annual meeting. New Town House Hotel, Kansas City, Kan., Jan. 14-16, 1952. This is to be a joint meeting with the Kansas Veterinary Medical Association. J. L. Wells, Box 676, Kansas City, Mo., secretary.

Iowa Veterinary Medical Association. Annual meeting. Fort Des Moines Hotel, Des Moines, Iowa, Jan. 16-18, 1952. F. B. Young, Waukee, Iowa, secretary.

Intermountain Veterinary Medical Association. Annual meeting. Newhouse Hotel, Salt Lake City, Utah, Jan. 21-23, 1952. M. L. Miner, Veterinary Science Department, Utah State Agricultural College, Logan, Utah, secretary.

Michigan State College, School of Veterinary Medicine. Annual postgraduate conference for veterinarians. Michigan State College, East Lansing, Mich., Jan. 23-24, 1952. Chester F. Clark, dean.

Illinois State Veterinary Medical Association. Annual meeting. Hotel Sherman, Chicago, Ill., Jan. 23-25, 1952. A. G. Misener, 6448 N. Clark St., Chicago 26, Ill., secretary.

Ontario Veterinary Association. Seventy-eighth annual meeting. General Brock Hotel, Niagara Falls, Ont., Jan. 23-25, 1952. G. A. Edge, Box 37, Postal Station F, Toronto, Ont., secretary.

Texas, State Veterinary Medical Association of. Annual meeting. Corpus Christi, Texas, Jan. 24-26, 1952. E. A. Grist, Box 11, New Braunfels, Texas, secretary.

Mississippi State Veterinary Medical Association. Annual meeting. Edgewater Gulf Hotel, Edgewater Park, Miss., Jan. 25-26, 1952. John A. Randle, West Point, Miss., secretary.

American Veterinary Medical Association. Annual meeting. Ambassador Hotel, Atlantic City, N. J., June 23-26, 1952. J. G. Hardenbergh, American Veterinary Medical Association, 600 S. Michigan Ave., Chicago 5, Ill., executive secretary.

## Regularly Scheduled Meetings

Bay Counties Veterinary Medical Association, the second Tuesday of each month. Howard F. Carroll, 2024 Lombard St., San Francisco 23, Calif., secretary.

California State Veterinary Medical Association. Annual midwinter conference. University of California School of Veterinary Medicine, Davis, Calif., Jan. 28-30, 1952. Charles S.

*(Continued on p. 26)*

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(COMING MEETINGS — *continued from p. 24*)

Travers, 3004 16th St., Room 208, San Francisco 3, Calif., executive secretary.

Cedar Valley Veterinary Association, the second Monday of each month (except July and August) at Black's Tea Room, Waterloo. F. E. Brutsman, Traer, Iowa, secretary.

Central California Veterinary Medical Association, the fourth Tuesday of each month. W. E. Smith, 516 Oatman, Sanger, Calif., secretary.

Central Carolina Veterinary Medical Association, the second Wednesday of each month at 7:00 p.m. in the O'Henry Hotel in Greensboro. J. T. Dixon, Winston-Salem, N. Car., secretary.

Chicago Veterinary Medical Association, the second Tuesday of each month. Robert C. Glover, 1021 Davis St., Evanston, Ill., secretary.

Coon Valley Veterinary Association, the second Wednesday of each month, September through May, at the Bradford Hotel, Storm Lake, Iowa. V. D. Ladwig, Sac City, Iowa, secretary.

Cuyahoga County (Cleveland, Ohio) Veterinary Medical Association, the first Wednesday of each month—September through May (except January)—at 9:00 p.m. at the Carter Hotel, Cleveland, Ohio. Roger W. Grundish, 4217 Mayfield Road, South Euclid 21, Ohio, secretary.

East Bay Veterinary Medical Association, bimonthly, the fourth Wednesday. Robert Clemens, 23352 Orchard, Hayward, Calif., secretary.

Fayette County Veterinary Association, Iowa, the third Tuesday of each month, except in July and August, at Pa and Ma's Restaurant, West Union, Iowa. Donald E. Moore, Box 178, Decorah, Iowa, secretary.

Florida, North-East Florida Veterinary Medical Association, the second Thursday of each month, time and place specified monthly. J. O. Whiddon, 829 San Marco Blvd., Jacksonville, Fla.

Greater St. Louis Veterinary Medical Association. Ralston-Purina Research Building, St. Louis, Mo., the first Friday in February, April, June, and November. W. C. Schofield, Dept. of Animal Pathology, Ralston-Purina Co., St. Louis 2, Mo., secretary.

Houston Veterinary Medical Association, Houston,

(*Continued on p. 28*)

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| ☐ Conjunctivitis* | P |
| ☐ Cystitis* | P D S |
| ☐ Distemper (secondary invaders)* | |
| Respiratory complications | P |
| Enteric disturbances | D S |
| ☐ Empyema* | P D S |
| ☐ Enteritis* | D S |
| ☐ Erysipelas | P D S |
| ☐ Fistula* | P D S |
| ☐ Gastrointestinal infections* | P D S |
| ☐ Hemorrhagic septicemia* | P |
| ☐ Infectious sinusitis (turkeys) | D S |
| ☐ Intestinal surgery (prophylactic use)* | P D S |
| ☐ Joint ill* | P D S |
| ☐ Leptospirosis | P D S |
| ☐ Mastitis* | P D S |
| ☐ Metritis* | P D S |
| ☐ Navel ill* | P D S |
| ☐ Nephritis* | P D S |
| ☐ Osteomyelitis* | P D S |
| ☐ Otitis* | P |
| ☐ Peritonitis* | P D S |
| ☐ Pharyngitis* | P |
| ☐ Pneumonia* | P D S |
| ☐ Pyelonephritis | P |
| ☐ Semen preservation | P D S |
| ☐ Septicemia* | P D S |
| ☐ Shipping fever (equine)* | P |
| ☐ Strangles | P |
| ☐ Surgical interventions (prophylactic use) | P D S |
| ☐ Tetanus | P |
| ☐ Wounds* | P D S |

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Texas, the first Thursday of each month. Edward Lepon, Houston, Texas, secretary-treasurer.

Illinois Valley Veterinary Medical Association, the second Sunday evening of even-numbered months at the Jefferson Hotel, Peoria, Ill. S. M. McCully, Lacon, Ill., secretary.

Indiana Tenth District Veterinary Medical Association, third Thursday of each month. L. A. Snider, New Palestine, Ind., secretary.

Jefferson County Veterinary Society of Kentucky, Inc., the first Wednesday evening of each month, in Louisville or within a radius of 50 miles. F. M. Kearns, 3622 Frankfort Ave., Louisville 7, Ky., secretary.

Kansas City Small Animal Hospital Association, the first Monday of each month, at the Hotel Continental. T. M. Eagle, Parkville, Route 2, Mo., secretary.

Kansas City Veterinary Medical Association, the third Tuesday of each month, in the Hotel Continental, 11th and Baltimore, Kansas City, Mo. K. M. Curts, 70 Central Ave., Kansas City 18, Kan., secretary.

Kern County Veterinary Medical Association, the first Thursday of each month. Richard A. Stiern, 17 Niles St., Bakersfield, Calif., secretary.

Keystone Veterinary Medical Association, the Philadelphia County Medical Society Building, 301 S. 21st Street, Philadelphia, Pa., on the fourth Wednesday of each month. Raymond C. Snyder, 39th and Woodland Ave., Philadelphia 4, Pa., secretary.

Maricopa County Veterinary Association, the second Tuesday of each month. Charles J. Prchal, 1722 East Almeria Road, Phoenix, Ariz., secretary.

Metropolitan New Jersey Veterinary Medical Association, the third Wednesday night of each month from October through June, at the Hotel Essex House, Newark, N. J. Myron S. Arlein, 2172 Millburn Ave., Maplewood, N. J., secretary.

Michiana Veterinary Medical Association, the second Thursday of each month. Write R. W. Worley, secretary, 3224 L.W.W., South Bend, Ind., for location.

Michigan, Southeastern Veterinary Medical Society. Herman Kiefer Hospital, Detroit, Mich., the second Wednesday of each month from October through May.

Mid-Coast Veterinary Medical Association, the first Thursday of every even month. C. Edward Taylor, 2146 S. Broad St., San Luis Obispo, Calif., secretary.

(*Continued on p. 30*)


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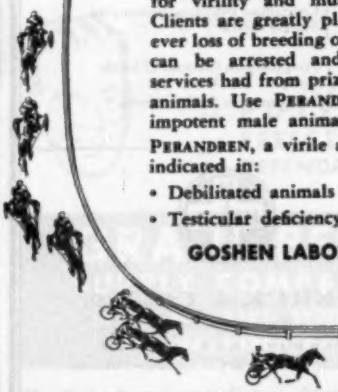

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(COMING MEETINGS — *continued from p. 28*)

Milwaukee Veterinary Medical Association. Wisconsin Humane Society, 4150 N. Humbolt Ave., Milwaukee, Wis., the third Tuesday of each month. Kenneth G. Nicholson, 2161 N. Farwell Ave., Milwaukee, Wis., secretary.

Monterey Bay Area Veterinary Medical Association, the third Wednesday of each month. C. Edward Taylor, 2146 South Broad St., San Luis Obispo, Calif., secretary.

New Castle County Veterinary Society, the second Wednesday of each month at 9:00 p.m. in the Hotel Rodney, Wilmington. Del. Harold Roberts, Paper Mill Road, Newark R3, Del., secretary.

New York City Veterinary Medical Association. Hotel Statler, New York, N. Y., the first Wednesday of each month. C. R. Schroeder, Lederle Laboratories, Inc., Pearl River, N. Y., secretary.

Northern San Joaquin Valley Veterinary Medical Association, the fourth Wednesday of each month. Tom Hagan, Gen. Del., Escalon, Calif., secretary.

Orange Belt Veterinary Medical Association, the second Monday of each month. Clark Stillinger, 1742 E. Holt Ave., Pomona, Calif., secretary.

Orange County Veterinary Medical Association, bi-monthly. Donald E. Lind, 2643 N. Main, Santa Ana., Calif., secretary.

Peninsula Veterinary Medical Association, the third Monday of each month. P. H. Hand, Box 1035, Millbrae, Calif., secretary.

Pima County (Arizona) Veterinary Medical Association, the third Wednesday of each month, in Tucson. R. W. Adami, 2103 S. 6th Ave., Tucson, Ariz., resident secretary.

Portland (Oregon) Veterinary Medical Association, the second Tuesday of each month, in the Auditorium of the Upjohn Company. L. G. Nicholson, 8415 S.E. McLoughlin Blvd., Portland 2, Ore., secretary.

Redwood Empire Veterinary Medical Association, the third Thursday of each month. John McChesney, 40 6th St., Petaluma, Calif., secretary.

Roanoke-Tar (N. Car.) Veterinary Medical Association, the first Friday of each month, 7:00 p.m., in Rocky Mount. G. L. Gilchrist, Edenton, N. Car., secretary.

Sacramento Valley Veterinary Medical Association, the second Wednesday of each month. S. M. Foster, 430 College, Woodland, Calif., secretary.

San Diego County Veterinary Medical Association, the fourth Tuesday of each month. Warren J. Dedrick, 904 S. Lemon, El Cajon, Calif., secretary.

Santa Barbara-Ventura Counties Veterinary Medical Association, the second Friday of

(*Continued on p. 32*)

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non-irritating
FUNGICIDE*

NAPRYLATE
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* *Keeney, E. L. and associates. Bull. Johns Hopkins Hospital 77:422, 1945*

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Made only by

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(COMING MEETINGS — *continued from p. 30*)

even months. Joe Ridgway, 1784 Thompson Blvd., Ventura, Calif., secretary.

Southern California Veterinary Medical Association, the third Wednesday of each month. R. W. Sprowl, 11756 San Vicente Blvd., Los Angeles 49, Calif., secretary.

South Florida Veterinary Society, the third Tuesday of each month, 8:00 p.m., at the Peckway Skeet Club, Robert P. Knowles, 2936 N.W. 17th Ave., Miami, Fla., secretary.

Tulsa Veterinary Medical Association, the third Thursday of each month, in Director's Parlor of the Brookside State Bank, Tulsa, Okla. John Carnes, Muskogee, Okla., secretary.

## Dr. Ingalls Appointed To Head Research Laboratory

Dr. W. L. Ingalls (OSU '42), Reynoldsburg, Ohio, has been appointed to head the new Product Research Laboratory of the Columbus Serum Co., Columbus, Ohio. He will devote initial studies to the development of modified live virus hog cholera vaccines and lyophilization. Dr. Ingalls spent

Dr. W. L. Ingalls

two years at the Virginia Experiment Station, where he devoted full time to research on bovine mastitis. In 1947, he returned to Ohio State University as instructor in veterinary pathology, becoming an assistant professor in 1948. Since then, he has been in charge of the veterinary diagnostic laboratory at the University.

# GOSH! it's Christmas!

. . . . and the **nicest** thing about it, is that we here at the National Laboratories get an opportunity to talk to you about something other than business.

**We hope the year has been one of your best!**

. . . . that on Christmas Eve you can put on your slippers, light up your pipe, and relax before the fire.

. . . . **and that you get safely through the night without one single emergency call!**

**We hope next year is even better!**

. . . . that you will find more and more clients accepting your guidance, relying on your professional knowledge to raise the standard of livestock health in your particular locality.

Now, while the voice of the carolers is heard in our land, there is no new way to say it, there is none more sincere — than our wish for you, of a **VERY MERRY CHRISTMAS.**

**THE GANG AT THE NATIONAL LABORATORIES**

***And Happy New Year, Too!***

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## Correspondence

Oct. 16, 1951

Dear Doctor Hardenbergh:

Thank you for your letter of Oct. 2, 1951, enclosing the splendid resolution passed by the House of Representatives of the American Veterinary Medical Association at its 88th Annual Meeting in Milwaukee.

It is a great satisfaction to have the unanimous approval of the actions of the American Medical Association in its effort to maintain the freedom of medical education and at the same time assist in solution of the financial difficulties of our medical schools. Such a resolution is a great encouragement to continue our efforts in these directions.

I am forwarding your letter and the resolution to Whitaker and Baxter, the directors of the National Education Campaign and they in turn will forward it to Doctor Lull at American Medical Association headquarters.

I would greatly appreciate it if you would express the gratitude of the American Medical Association and my own personal thanks to the Executive Board and the House of Representatives of the American Veterinary Medical Association for its splendid action.

Sincerely yours

JOHN W. CLINE, M.D.

• • •

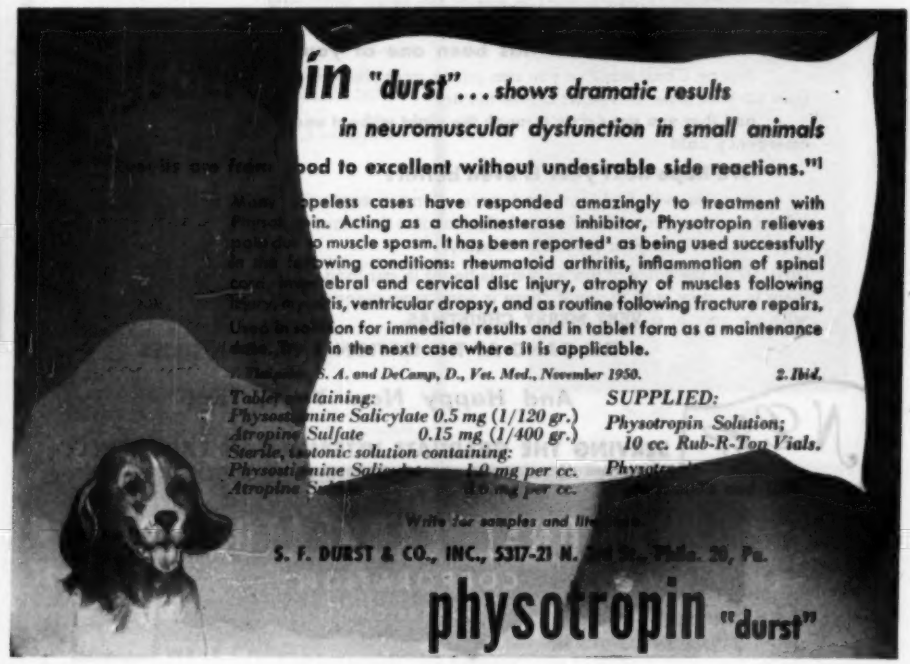
While this column was originally intended to reflect the views of our readers, we are breaking with "tradition" to publish the following letter written by the AVMA professional relations department to Mr. Claude W. Gifford, associate editor, *Farm Journal*, Philadelphia.—ED.

Dear Mr. Gifford:

In my haste to acknowledge receipt of the last issue of *Farm Journal*, I fear I did not stress the general excellence of the recent series of brucellosis articles in *Farm Journal* . . . . I think they have been exceptionally good and that you and your publication have rendered a real service to livestock producers. . . .

I take issue though with your contention

(Continued on p. 36)



in "durst"... shows dramatic results
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od to excellent without undesirable side reactions."[1]
ppeless cases have responded amazingly to treatment with
in. Acting as a cholinesterase inhibitor, Physotropin relieves
o muscle spasm. It has been reported[2] as being used successfully
owing conditions: rheumatoid arthritis, inflammation of spinal
ebral and cervical disc injury, atrophy of muscles following
is, ventricular dropsy, and as routine following fracture repairs.
on for immediate results and in tablet form as a maintenance
in the next case where it is applicable.
S. A. and DeCamp, D., Vet. Med., November 1950. 2. Ibid.
taining:
mine Salicylate 0.5 mg (1/120 gr.)
Sulfate 0.15 mg (1/400 gr.)
SUPPLIED:
Physotropin Solution;
10 cc. Rub-R-Ton Vials.
Sterile, isotonic solution containing:
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(CORRESPONDENCE — *continued from p. 34*)

that it is necessary to allow technicians to vaccinate and collect samples. I do not believe the federal or many of the state governments have tried to enlist the practitioners' support and help. Below are some of the shortcomings of the present programs which discourage the practitioners' active, vigorous support.

1) Practitioners live in a community for years . . . unless they have a firm conviction the program will produce results, they are not interested in "beating the drums" for it or working under it. In 1950, when our Practitioner Participation in Brucellosis Control Committee made a survey, only 26 states were following an area program. . . . Give the practitioners a sound, intensive, comprehensive program, including the area features, and he will be inclined to "sell" the program and "squeeze" in the work.

2) The system and pay . . . is antiquated . . . only 20 states paid on a per farm and per head basis for bleeding and vaccinating; 11 states made no provision for paying . . . and 11 paid on a per diem and per mile basis. . . .

3) No real effort has been made . . . to reduce the paper work practitioners must do . . . with one exception, New York State. . . .

4) The weakness and inadequacy of state laws . . . is another factor. Some shortcomings are: the failure to require tests prior to sale, to enforce importation regulations . . . to enforce quarantines. . . .

. . . Ohio has about 900 veterinarians, Wisconsin has approximately 450. Compare the cattle populations. Which state has a shortage of veterinarians? Ohio is using laymen (so-called technicians) and Wisconsin is not finding it necessary. . . .

There are two sides to the story. I believe this summarizes the practitioners' side. You are free to make any use of this letter you desire. . . . We are always anxious to coöperate with you and your staff [regarding animal diseases].

• • •

SIR:

In the November, 1951, issue of the AVMA JOURNAL, page 382, paragraph entitled "Listeriosis" the statement appears,

(*Continued on p. 38*)


**NOW! Fast . . . Safe . . . SURE Way To Dehorn Calves**

Sunbeam STEWART

**AUTOMATIC HEAT CONTROL CALF DEHORNER**

Electric dehorning with the new Sunbeam Stewart Calf Dehorner is *fast, safe* and *certain.* Dehorning can be done any time of year. Only a few minutes are required for the entire job. No loss of blood—no open flesh wound—no bad after effects. Dehorner has automatic control for steady high heat for dehorning or soldering. Cool, easy-grip handle. Complete with heavy duty soldering tip.

- Automatic Control for Steady Heat
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- No Loss of Blood—No Open Flesh Wound

Becomes heavy-duty soldering iron when soldering tip is attached.

*Write for information about Sunbeam Stewart animal clipping equipment*

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## solved by this COMPLETE FOOD

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Crisp brown ribbons. Served dry or moistened. 25-oz. box.

It's fastest mixing! It's flaked! 5-lb. or 25-lb. bags.

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**ONLY** dry dog food with this seal of approval

When a man buys a dog he is in for a lot of confusing "clues" on feeding from friends and relations! He might ask *you*, the expert, which he should follow. Above all, of course, you'll want to tell him his dog should have *complete nutrition*. And you can confidently recommend Kellogg's Gro-Pup Meal and Ribbon . . . both are complete and balanced foods.

The goal of Kellogg's scientists was a ration, *complete* with all 28 + nutrition components dogs are known to need; in proper proportions; their values preserved. The outcome is Gro-Pup, verified as *complete nutrition* by the Joint Committee on Foods of A. V. M. A. and A. A. H. A. So you can be sure that grown dogs and puppies are *completely nourished* with Gro-Pup.

**WRITE FOR FREE TRIAL SAMPLE • KELLOGG'S, BATTLE CREEK, MICHIGAN**

(CORRESPONDENCE — *continued from p. 36*)

"The early recognition of this malady in animals affected (swine, sheep, cattle, foxes, man) .... etc. Should not poultry be on this list?

Very truly yours,
Seibert L. Berlin, V.M.D.
Chalfont, Pa.

[In the April, 1951, JOURNAL (pp. 242-252) references on listeriosis in chickens is cited in the second paragraph of the article on listeriosis in Michigan by Gray, Stafseth, and Thorp.—ED.]

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***THE LEATHERCRAFT CO., FILBERT & PRESTON STS., PHILADELPHIA 4, PA.***

In 1951, there is much evidence that there are far more tubercular cows in this country than anyone would like to think or admit.—*C. R. Donham, D.V.M.*

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**July 1951**
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250 CC.
MERASUL
A Vehicle for Administering Penicillin in the Treatment of Bovine Mastitis
MERASUL is a water in oil emulsion containing
Sulfathiazole Sodium 5% (w./v.)
Sulfamerazine Sodium 5% (w./v.)
aluminum monostearate 2%, lanolin and sodium ethyl mercuri thiosalicylate 1-125,000 added as a preservative. Not sterilized.
Suggested dose: 20 cc. per quarter.
SHAKE BEFORE USING
Warning — Merasul may produce effects similar to those of a like amount of sulfa drugs given orally. If toxic reaction should develop discontinue use and empty udder of fluid.
Dissolve the penicillin salt in 1-2 to 1 cc. of sterile water, mix with Merasul and inject the desired quantity into the udder through the teat canal.
For use by graduate Veterinarians only.
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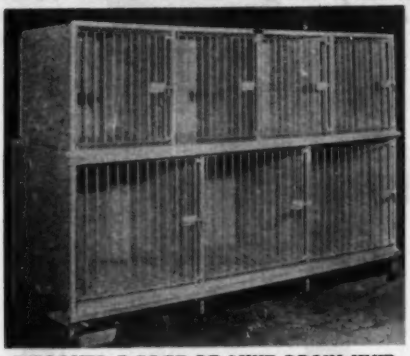

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**Note new style Bar Doors — Heavier (⅜") rods — eliminates brace bar in center. Note: Frames of door are rounded on top; water runs off instead of remaining on door frame.**

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**Provides an accurate pattern against which to cut with knife or razor blade. Fits firmly, cannot move or slip when clamped into position. Made of non-rusting, light, cast aluminum, highly polished. Lasts a lifetime with minimum care. Simplicity of design and construction reduces possibility of breakage or mechanical failure. Forms immediately available to provide distinctive marking of these breeds:**

**Boxer — postpaid $15.00**
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**Doberman — postpaid $15.00**
**Set of above four — postpaid $50.00**

**These patented "championship" forms are patterned after markings of winners of top honors in show competition. Forms for other breeds made on special order. Sold to veterinarians only. Send check or money order.**

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**Remittance must accompany order.**

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### Wanted—Veterinarians

As part of its program of expansion, the Virginia Division of Animal Industry has openings for four qualified veterinarians, one as regional laboratory director and the others as field inspectors. Forty-hour week, sick leave and annual leave allowances, and participation in a liberal retirement plan. For further information, address above agency, 1102 State Office Building, Richmond, Va.

VETERINARIAN WANTED—man or woman, experienced small animal work. Profit sharing, pays $7,000 minimum to start. Must be capable taking full charge. Address Dog House Veterinary Hospital, 14870 Livernois, Detroit 21, Mich.

WANTED—veterinarian for field work in T.B. and Bang's disease testing in State of Delaware. Apply to Dr. Harry McDaniel, Jr., Director, Livestock Sanitation, State Board of Agriculture, Dover, Del.

UNUSUAL OPPORTUNITY—for a thoroughly experienced small animal practitioner in an active southern California hospital. Good salary and an interest in the business available for one who qualifies. Address "Box O 8," c/o JOURNAL of the AVMA.

WANTED VETERINARIAN—to work as partner in small animal practice in Fairbanks, Alaska. Party could lease practice if preferred. Must be graduate of AVMA-approved school. No license required. Write, giving full particulars, to Dr. A. M. Albin, Southside Dog and Cat Hospital, P.O. Box 1473, Fairbanks, Alaska.

WANTED ASSISTANT—in mixed practice, mostly dairy cattle. Location, Willamette Valley, western Oregon. Attractive commission will be offered to right party. Please write full particulars. Address "Box O 6," c/o JOURNAL of the AVMA.

WANTED—veterinarian for a very busy southern California small animal hospital. Must have some

(*Continued on p. 42*)


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*The three Boardwalk hotels shown here will house most of the convention registrants. Fill out reservation form below and mail it to the Housing Bureau. If hotel of first choice is filled, your request will be forwarded to another hotel. Confirmation will be sent to you.*

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| 3. Ritz-Carlton | 6.00-12.00 | 8.00-14.00 | 20.00-25.00 | 25.00-30.00 |

*The Ambassador will be convention headquarters. Good accommodations are available in a wide range of prices at many hotels besides the three listed here; persons desiring accommodations at hotels other than those listed should write to the Housing Bureau, 16 Central Pier, Atlantic City—stating the type and price wanted. Number of single rooms is limited. All rates subject to 3 per cent municipal tax.

†All double rooms at the Ambassador and Ritz-Carlton have twin beds.

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Please make reservations indicated below:

***(Three choices MUST be shown.)***

First choice hotel .....

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Third choice hotel .....

Accommodations and Rates Per Day Desired:

- ☐ Single room at $.....
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- ☐ Suite at $.....
- ☐ Combination for ..... persons at $..... per combination

Arriving on (date) ..... at ..... a.m. ..... p.m.

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Room will be occupied by (attach list of additional names if necessary):

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Name ..... City and State .....

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Street Address .....

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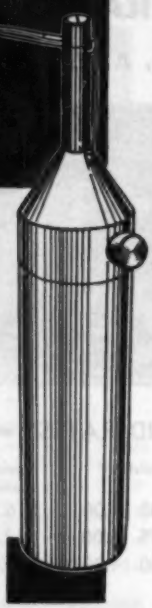

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- Complete instrument with extra needles and bobbins, full instructions . . . $22.50

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**3 and 1 free.....5.00**
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**12 and 4 free.....17.00**
**24 and 4 free.....28.00**

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(CLASSIFIED ADS—*continued from p. 40*)

experience. Excellent opportunity for advancement. Address "Box O 9," c/o JOURNAL of the AVMA.

WANTED—veterinarian for small animal institution. Give complete personal and professional background. Good hours, adequate lay help. Provision for vacation with pay, retirement, insurances, and pay increases. Salary dependent on experience. Massachusetts license required. Address "Box O 10," c/o JOURNAL of the AVMA.

WANTED—assistant veterinarian for small animal practice. State full particulars, qualifications, and salary expected in first letter. Address Dr. James Patterson, 3800 Grand River, Detroit 8, Mich.

WANTED—SALES MANAGER—VETERINARY MEDICINE—Prominent ethical pharmaceutical manufacturer, interested in entering this field, seeks a man with organizational ability, good experience with farm market, and sufficient technical knowledge to be able to work closely with laboratory personnel in the development of a marketable line. Send resumé, including salary requirements. Address "Box O 19," c/o JOURNAL of the AVMA.

WANTED VETERINARIANS—As a part of its expanded meat inspection program, the State Live Stock Sanitary Board of Florida has openings for experienced routine and supervisory veterinary meat inspectors. Forty-hour week, sick and annual leave allowances, and participation in a liberal retirement plan. License to practice veterinary medicine in Florida not required. For further information, address the above agency, P.O. Box 389, Tallahassee, Fla.

WANTED—assistant veterinarian for mixed practice in Wyoming. State qualifications. Prefer man with small animal experience. State salary expected. Address Dr. R. E. Pierson, Saratoga, Wyo.

VETERINARIAN WANTED—for staff of modern, well-equipped small animal clinic-hospital. Salary and bonus. Answer in full detail. Address HUMANE SOCIETY of MISSOURI, 1210 Macklind Ave., St. Louis 10, Mo.

**Wanted—Positions**

WANTED POSITION—Experienced graduate of AVMA-approved school, with family, age 32, desires association with ethical pharmaceutical firm doing research. Would consider teaching. Address "Box O 13," c/o JOURNAL of the AVMA.

Veterinarian, 33, desires position as assistant. Graduate of veterinary academy in Vienna. Experienced in sterility, obstetrics, surgery, and artificial insemination. Large and small animals. High scientific qualifications and the best of references. Address "Box O 11," c/o JOURNAL of the AVMA.

WANTED ASSISTANTSHIP—with busy practitioner, leading to lease, partnership, or purchase of practice. Recent graduate of AVMA-approved school, with nearly four years of military service. Address "Box O 12," c/o JOURNAL of the AVMA.

(*Continued on p. 44*)

Friskies

Authoritative information on the scientific care and feeding of dogs. Published by Albers Milling Company (a division of Carnation Company) under the supervision of Dr. E. M. Gildow, B.S., M.S., D.V.M., Director of Research.

**No. 12**

# DOG RESEARCH NEWS

## ...But What is Meat?

If any group of dog breeders were to discuss the correct diet of the dog, they would be certain to argue the pros and cons of meat. But what is meat?

Is it beef, horse, pork or lamb? Is it lean or fat? Is it raw or cooked? Does it include liver, heart, kidney, brains or sweet breads?

The variety of answers we would get would prove that when we say "meat," we are depending largely on opinion. Opinions are not dependable. Facts prove the only safe basis upon which to act. And facts are uncovered by experiments.

From experiments made by leading authorities on the subject we can arrive at certain conclusions.

To begin with, meat is a variable factor in supplying nutrients to dogs. There are differences in the amino acids present in meat from various sources; also great differences in other factors associated with meat, such as vitamins and minerals.

**Great strides have been made in dog nutrition at the famous Friskies Research Kennels.**

Meat must be defined in terms of whether it contains muscle meat, fat, tendon material or glandular organs. Furthermore, some of the amino acids are destroyed or reduced in volume when meat is cooked or processed.

Meat is deficient in calcium and phosphorus; and – unless liver or other glandular material is included – vitamins A and D.

**This healthy family is one of many at the Friskies Research Kennels which has thrived on Friskies alone.**

While most meat is high in animal protein factors, certain forms are not. Cooking of meat destroys some of its nutrient quality, but protects against disease conditions that may be contracted from raw meat.

It follows that the use of meat requires an expert's knowledge. The average dog owner is on surer ground if he relies on a reputable prepared dog food such as Friskies.

Friskies is a scientifically balanced diet that provides every food element dogs are known to need for total nourishment. It is the achievement of Albers 50 years' experience in animal nutrition.

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2. Transfers the weight of heavy, swollen, or congested udders from strained muscles to the cow's back, preventing further breakdown.
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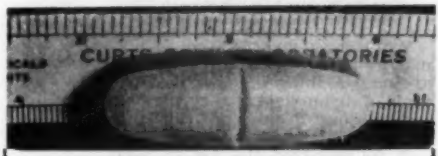

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(CLASSIFIED ADS—*continued from p. 42*)

POSITION WANTED—veterinarian, married, graduate of AVMA-approved school, four and one-half years' small animal experience, desires position with small animal hospital, or will lease with or without option to buy. Draft exempt. Prefer Michigan, Indiana, or Ohio. Address "Box O 15," c/o JOURNAL of the AVMA.

Veterinarian, graduated in Europe, wishes position as assistant in mixed, small, or large animal practice. Experience in this country. Middle age. Training in artificial breeding. Address "Box O 16," c/o JOURNAL of the AVMA.

Veterinarian, age 34, married, practitioner and veterinary meat inspector for four years in Germany, experienced in tuberculosis and brucellosis testing in United States, good English, first papers, driver's license, excellent references, desires municipal or state position in meat inspection or disease control, or position in pharmaceutical industry. Address "Box O 17," c/o JOURNAL of the AVMA.

**Wanted—Practices**

PRACTICE WANTED—small animal practice desired in Southwest, preferably Los Angeles vicinity. Will consider assistantship with option to lease and/or buy. Have California license. Address "Box O 5," c/o JOURNAL of the AVMA.

**For Sale or Lease—Practices**

FOR SALE OR LEASE—fully equipped small animal hospital in rapidly growing Nassau County, Long Island, New York. Expect recall to Army. Address "Box N 14," c/o JOURNAL of the AVMA.

FOR SALE—established mixed practice in New England, 70 per cent large animal. Gross $15,000 and growing. Beautiful two-family house, new small animal hospital, large plot of land on main highway. Will sell for value of property and equipment—$25,000. Terms. Address "Box O 1," c/o JOURNAL of the AVMA.

FOR SALE—fully equipped brick hospital, two years old. Practice established twenty-five years. Seventy per cent small animal. Real estate worth asking price. Reasonable terms to qualified veterinarian. Owner permanently disabled. Address Dr.

(*Continued on p. 46*)

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R. E. Taylor, P.O. Box 926, Hendersonville, N. Car.

FOR SALE—modern, well-equipped small animal hospital in Virginia. Would also be interested in leasing to right party. Address "Box O 2," c/o JOURNAL of the AVMA.

**Remittance must accompany order**

FOR SALE—large animal practice in northern Illinois. Gross over $25,000. Practice includes 7-room home, large lot, barn, and office building. Price $17,000. Address "Box O 3," c/o JOURNAL of the AVMA.

FOR SALE—modern small animal hospital and equipment, due to recent death of owner. Building approximately 60 by 90 ft. on lot 175 by 200 ft., with modern apartment above hospital. Excellent mixed practice on outskirts of Atlanta, Ga. Also small animal hospital in best location of Atlanta. Excellent opportunity to take over a well-established practice at a very moderate cost. Address "Box O 4," c/o JOURNAL of the AVMA.

FOR SALE OR LEASE—small animal hospital with apartments, excellent clientèle. Reasonable terms to responsible and capable veterinarian. Address Dr. Raymond J. Garbutt, 367 E. 62nd St., New York 21, N.Y.

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Will sell equipment and lease small animal hospital and practice in West Hartford, Conn. Upstairs apartment will be available in approximately one year. Address "Box N 9," c/o JOURNAL of the AVMA.

For sale, lease, or partnership, long-established small animal hospital, mixed practice. Excellent opportunity and location. Address Mrs. H. W. Ayers, Owner, 7 NE 9th St., Oklahoma City, Okla.

FOR SALE—established mixed practice in large northwestern city. Complete hospital; facilities for 40 small animals, 15 large animals; 5-room house; double garage. Address "Box O 18," c/o JOURNAL of the AVMA.

**Miscellaneous**

WANTED TO PURCHASE—"Kimball's State Board Questions and Answers." State condition, year printed, and price wanted. Address "Box O 14," c/o JOURNAL of the AVMA.

Back numbers, dating from March, 1946, of the JOURNAL of the AVMA, Veterinary Medicine, and North American Veterinarian available. Will be sent for mailing costs. Address Dr. A. E. Wight, 3730 18th St., N.E., Washington 18, D.C.

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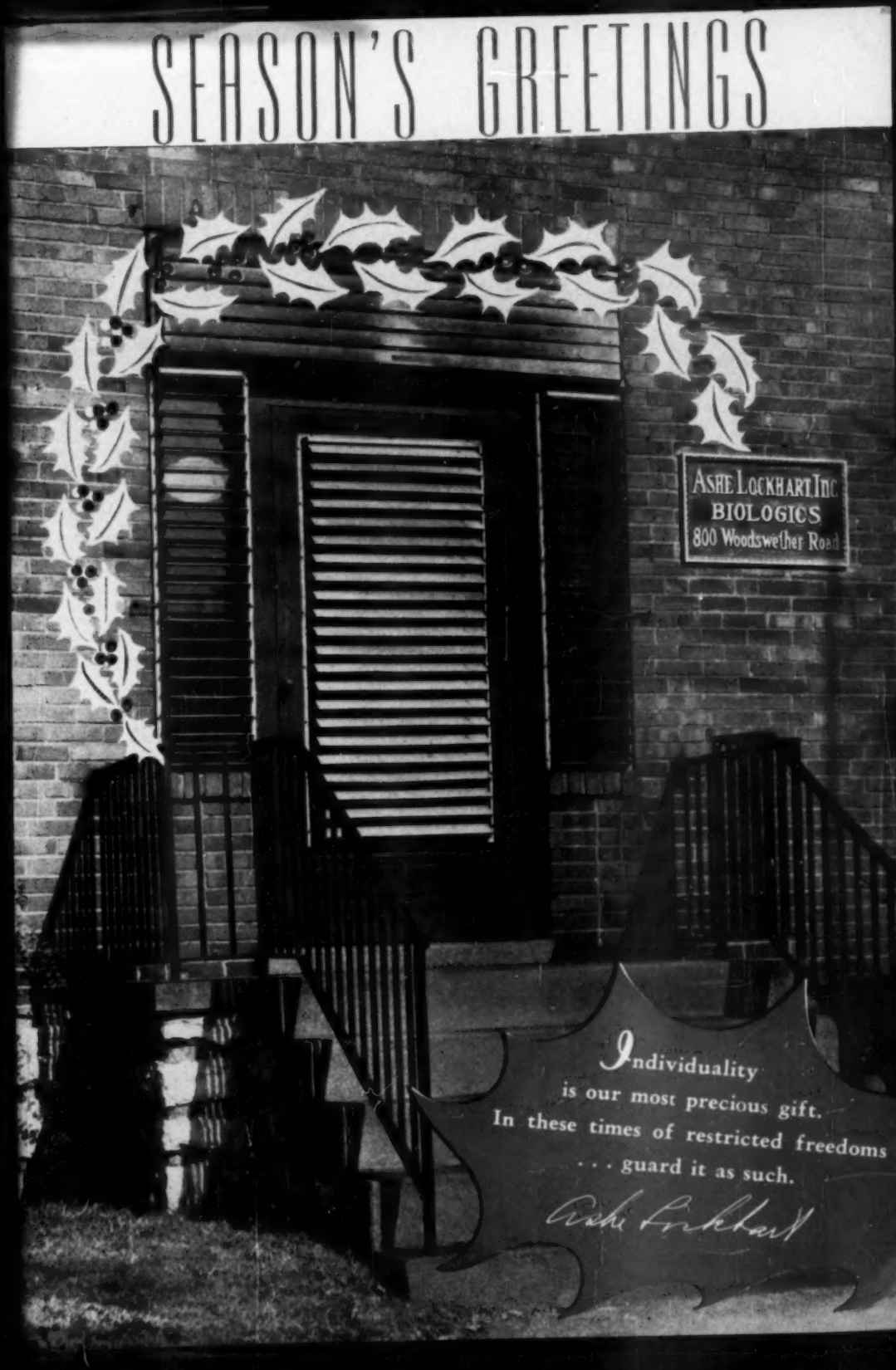
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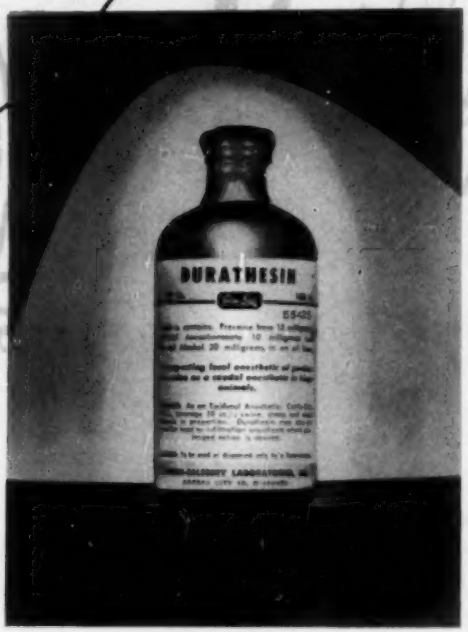


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